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In This Issue

GENERAL ARTICLES

President Farquharson's Address 171
Some Highlights from Papers Delivered at the 83rd Annual Meeting 180
Gleanings from Committee Reports 186
Historical Sketches and Memoirs. II. The AVMA Is 92 Years Old, Not 83—*L. A. Merillat* 187
Report on Infectious Equine Encephalomyelitis in the United States in 1945 191

SURGERY AND OBSTETRICS

Primary Splenic Endothelial Sarcoma in a Dog—*Stuart Lindsay and James W. Gilmore* 194

CLINICAL DATA

Pulmonary Actinomycosis in Swine—*L. R. Vawter* 198
Trichomonas and Hemoproteus Infections and the Experimental Use of DDT in the Control of Ectoparasites in a Flock of Signal Corps Pigeons in the Territory of Hawaii—*Robert H. Yager and Chester A. Gleiser* ... 204
A Case of Histoplasmosis in a Dog—*H. R. Seibold* 209
A Case of Bovine Listerellosis in Pennsylvania—*W. B. Boucher* 213
An Improved Method of Testing for Botulinus Toxin by the Use of Penicillin—*E. R. Quortrup* 214
Listerellosis in a Hereford Cow—*Clarence R. Cole* 216

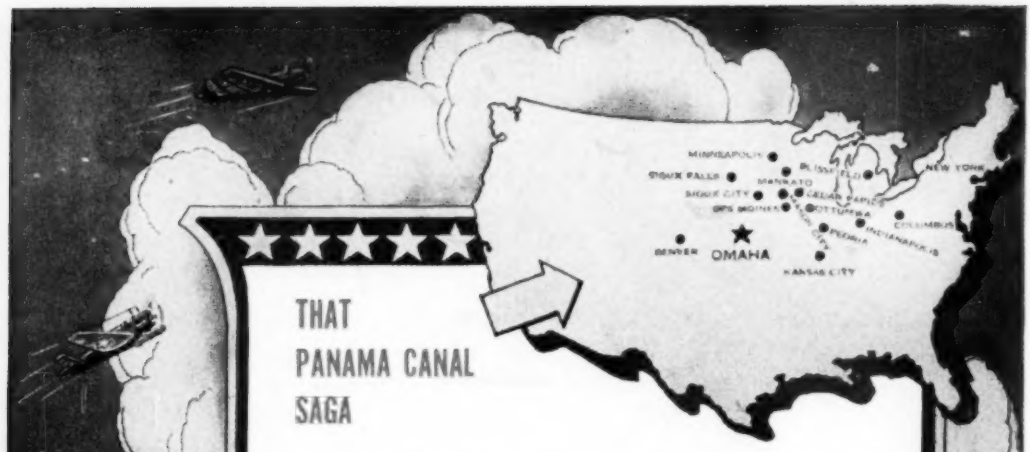
EDITORIAL

The Local Practitioner in Preventive Medicine 222

Surgery and Obstetrics 194
Clinical Data 198
Nutrition 219
Editorial 222
Current Literature 226
The News 229
Veterinary Profession and the War 243

(Contents continued on pages ii and iv)

Volume CIX **SEPTEMBER 1946** *Number 834*



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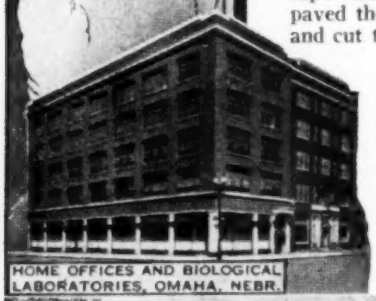

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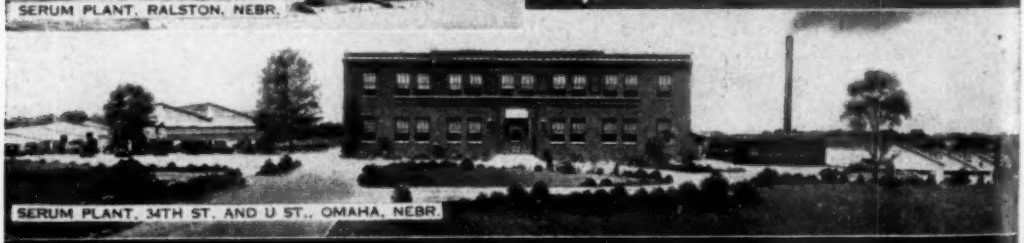

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CONTENTS

(Continued)

Surgery and Obstetrics

A Million Surgical Operations 197

Clinical Data

Foot-and-Mouth Disease Threatens 203
Thiouracil 207
Newcastle Disease and Fowl Plague 207
Improved Anthrax Vaccine 208
Velsicol, 1068 208
American Foulbrood 211
Survey of Diseases 212
Skin Allergy in a Horse 212
Scalp Ringworm 212
Ramon's New Biological Treatment of Tetanus 213
TDE 215

Nutrition

Biotin Deficiency in Pigs 219
Present Knowledge of Vitamin A in Nutrition 220
Animal Protein Needed 220
Controlling Cannibalism 221
Feed Famine Over? 221

(Continued on page iv)

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CONTENTS—Continued

Editorial

Prophetic? 222
Registry of Veterinary Pathology 223
Reducing Livestock Populations an Unmeasured Hazard 224
Veterinarians and Associations 224
County Veterinarians 224
Memorable AMA Session—Its Teachings 225

Current Literature

Abstracts

Sulfaguanidine in Swine Coccidiosis 226
Fowl Lymphomatosis Transmission 226
Hookworm Infection in Lambs 226
The Viability of Buried Seeds 226
Equine Laryngeal Hemiplegia 226
Rinderpest 227
The Control of Tuberculosis (Human) 227

Books and Reports

The Army's Permanent Dog Corps 227
Ohio Association Year Book, 1946 227
Dogs in the News 228

The News

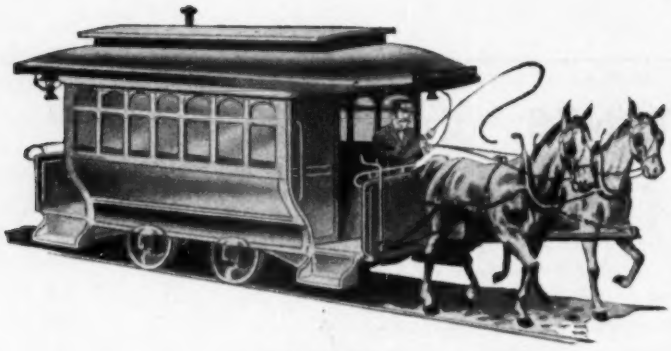
Executive Board Elections 229
Registration at Boston Session 229
Third Report on Contributions to AVMA Research Fund 229-230
Applications 229
U. S. Government 233
Among the States 234
Foreign 240
Coming Meetings 241
Deaths 242

The Veterinary Profession and the War

Veterinarians for Korea 243
Awards and Citations 243
Veterinary Officers Separated from Military Service 244
Veterinarian in Marine Corps 244

Miscellaneous

The Division of Biology and Agriculture, N.R.C. 178
Multiplicity of Drug Names 179
Sanitary Inspection of Eggs 179
Animal Population and Veterinary Education in 1850 179
Revival of International Poultry Congress Proposed 185
A House of Many Mansions—Food Production 185
Poor Thermometers 228
Lucky Puff, 19¼-Year-Old Ayrshire (illustration) 225
An' Related Topics ..... *xxiv*



Way Back When

horse cars were still a common sight on some metropolitan city streets . . . in 1914, that's when some of the Allied divisions first put into print a policy which was then already two years old, that of:

Sales to Graduate Veterinarians, ONLY

That's why we can say without fear of successful contradiction that that policy, now so celebrated, originated within this organization.

That it has been rigidly enforced during all those years is an indication of the steadfastness of our purpose, both to protect the veterinarian from the encroachments of untrained and inept laymen upon his practice, and to protect animal owners against the serious consequences which so often follow lay treatment.

Published in the Country Gentleman, June 20, 1914, this advertisement first publicly declared the policy inaugurated in 1912, that of confining sales to members of the veterinary profession. We believe it also to be the first publicity ever attempted to teach laymen to discriminate between graduate veterinarians and non-graduates, empirics and "quacks."

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VOL. CIX SEPTEMBER, 1946 NO. 834

The President's Address

JAMES FARQUHARSON
Fort Collins, Colorado

AS THE BASIS of every man's decision concerning the occupation he will follow, there must be a determination of what are to him the most appealing values of life. To one type of man, there is supreme satisfaction in playing life's game of chance; supreme pleasure in the run of its cards; loftiest music in the click of its dice; and success is measured by the size and color of its stacks of chips. To such men the field of competitive business has most appeal. They are the folk who build our factories, market our inventions, sell our merchandise, increase our supply of goods and gadgets to make life more luxurious and increase its complexities. To another type, the excitement of business competition has little thrill, even when unafraid to sit in its ruthless game. These folk find most pleasure when secluded from life's activities, in exploring its secrets and mysteries, seeking its beauties or interpreting its meanings; such men give the world not only its art and its philosophy and poetry, but also its research and knowledge and inventions in the later exploitation of which the business men get much of their wealth. To still another type of man pleasure comes from taking part in life's activities, but not in its competitions. His interest is not in winning from his neighbors, but in giving them benefit; not in bargaining with them, but in serving them. These men fill our professional fields; they are our engineers and architects, our lawyers and statesmen, our teachers and clergymen, our physicians and veterinarians. To them we look not for goods and merchandise, but for advice as to what goods we should buy; not for discovery of knowledge, but for the application of knowledge to our practical needs. To this last class belongs particularly that finest thrill of pleasure which comes from serving the needs and remedying the ills of one's neigh-

Dr. James Farquharson

bors. Yet by proper standard of measurement the test of success for all types of livelihood is the same. The men of business succeed not to the extent of their winnings from their competitors, but in proportion as they give more and better satisfaction to the needs of their communities; the student and artist and research worker succeed not by the amount of their devotion to art or research, but in proportion as their achievements are helpful or inspiring to the public; the professional man succeeds directly in proportion to his service to his fellows.

We are members of a great profession, embarked on a voyage of public service, sailing the ocean of unlimited horizon. To quote Oliver Wendell Holmes, "To reach a port, we must sail, sometimes with the wind, sometimes against it, but we must sail, not drift, nor lie at anchor." The veterinary profession is on the threshold of a great expansive program. We must seize every opportunity to engage and develop these new fields which are presented to us.

We should be greatly concerned with the type of leadership and the vision in the various fields of veterinary endeavor because high standards of veterinary service are a public consideration. The existence and growth of any vocation depends upon the type of service rendered in the best interests of public welfare. The next ten years will decide whether our deserved place of permanence in our economic welfare will be secure, or whether we are to drift to a place of obscurity.

Appraisal of veterinary service should come from within. An honest expression of any situation will undoubtedly not be appreciated nor acceptable to all. Viewpoint frequently depends upon vulnerability. The various fields of veterinary medicine may be likened to ships in a fleet. Some sail, some drift, and some remain at anchor.

EDUCATION

Organized veterinary medicine begins with education. The major responsibility of veterinary colleges is to maintain a high quality of veterinary service in thorough preparation of the students as general practitioners. Training in specialized fields can only be accomplished in graduate training. Appraisal of the present schools demonstrates that all are weak in one or more departments. The general strength is in the preclinical studies; however, the majority are woefully weak in the clinical fields. This glaring weakness is reflected in the demand for internship.

Today, art and science are more or less inseparable, and are comparable when they designate a branch of learning. Accepting the common and broad implication of art, it is associated with technical knowledge and proficiency of skill in its practical application.

In analyzing our present day educational methods and trends, one wonders if the educators have not lost sight of the art that should follow the science of veterinary medicine.

It is obvious that the graduate has much book knowledge combined with disjointed, statistical material and information, but he is incapable of crystallizing the fundamental principles as applied to the practical art of clinical veterinary medicine. Our present standards in the basic sciences are on a sound foundation and will continue.

The desire to raise the educational standards is commendable. Nevertheless, the curriculum is inflexible, although appeasive curricular changes, too little and too late, have been made to meet new demands. One needs only to refer to poultry, nutrition, and food hygiene. Twenty years too late we wake up to find that they should have been recognized as major studies in veterinary medicine. We are now excitedly trying to retrieve them after the profession has all but lost them to other educational fields and commercial interests, neither of which is capable of performing service in the best interests of public welfare.

With propriety, we may ask ourselves whether such charges have some basis. The fault lies principally in our colleges and not with the students. We should teach our students to think and reason, not to follow and mimic. The average college graduate, today, shows sublime inability to use his mind for reasoning and to use his hands in the performance of professional tasks.

The field of veterinary endeavor is diversified but it is reliably estimated that 75 per cent of our graduates become practitioners. In order for the other 25 per cent to fill a niche in organized veterinary medicine in the most capable and efficient manner, they must be proficiently trained in clinical veterinary medicine. They must have profound knowledge and sympathetic

understanding and practical approach in disease problems that daily confront the practitioner. Therefore, the primary objective of the veterinary college is to train the undergraduate to observe intelligently and keenly, to analyze critically, so that he may confidently approach the problems of practice. Only thus will our colleges produce the highest quality of practitioners to serve the best interests of the livestock industry and the American people. When we fail in this, we cannot hope to survive; others will take our place.

It is generally agreed that we remember 10 per cent of what we hear, 30 per cent of what we read, 50 per cent of what we see, and 90 per cent of what we do. It has been truly stated that possibly the two most efficiently taught courses in college are music and athletics. They follow the sound principle that on completion of the fundamentals—they say "play."

The basic sciences in veterinary colleges should be taught as thoroughly as possible so that the student may fuse them together and utilize them for practical diagnosis and therapy. The student's appetite and capacity for logical thinking and reasoning should be stimulated by ample exposure to clinical subjects which will give him confidence in his ability to practice the art of veterinary medicine. The last two years are so arranged as to train the undergraduate in practical courses. Yet, if we analyze our courses, we continue to supersaturate the student with classroom work and never say "play." This classroom work cannot be eliminated. The student is confined to the sheltered atmosphere of the classroom in which the diagnosis is made and therapeutic measures outlined. Under such a system his development in thinking and reasoning remains dormant. Not only should his potential qualities be developed for thinking and reasoning, but also for performing the operation. Following adequate preparation in basic sciences, the undergraduate should be trained in observing and doing. Quoting Osler, "To study patients without books is to sail an uncharted sea. To study books without patients is to never go to sea at all."

In order to say "play" veterinary colleges must first have an ample, balanced supply of clinical material for a generous exposure in training the undergraduate. If clinical material is lacking it should be developed by experienced clinicians in fair and cooperative practices with practitioners. The clinical force should have at least one staff member for each group of eight or ten students. The college should have an adequate physical plant and equipment to familiarize every student with diagnostic apparatus and therapeutic armamentarium ordinarily used by the practitioner.

Preliminary training of the clinical student should consist of instruction in professional decorum, in compilation of a proper case history, in correct ways to approach and restrain a patient, and in detailed physical examination and diagnostic procedures. In turn, this should be put into practice by requiring the student to think for himself by recording histories, making physical examinations and diagnoses and suggesting the logical therapeutic measures and course; this to be checked by a staff member assigned to his group.

The student should prepare, and be first assistant in, all surgical operations, and be given the responsibility of actual ministrations in postoperative and medical care — all under strict supervision. Proficiency in surgical technique should be attained by repeated operations on subjects furnished by the institution. All of which is balanced by practical lectures. For conditions the graduate will meet in the field, the clinical staff would do well to eliminate the extensive use of the modern large-animal operating table.

The veterinary faculties of the state colleges and universities might do well to look at the many successful practitioners graduated from private schools. The state colleges have eliminated the weak points of the private schools, but they have failed to recognize and adopt the strong points. The strength of our medical colleges lies in the fact that they revolve around clinical medicine, but one can state without fear of contradiction that there is not one veterinary college that is built around clinical medicine. The Council on Education should use all of its power to correct this glaring deficiency.

Visual education has merit,— it saves time and stimulates the interest of the student. The subject matter, which is presented vividly, is easily assimilated, and long retained. We must modernize and simplify our teaching methods.

For survival, all of these conditions are fundamental in what has been regarded as good training. Training will give confi-

dence and will stimulate that inborn competitive desire to surpass one's colleagues in the application of the art of veterinary medicine. Anything short of this goal cheats the student, and our college becomes nothing but a mill.

It is these inadequacies in clinical training that cause the student to shirk from practice and bring the criticism, by the older members of the profession and the public, that we are not doing the job—and the college is to blame.

More attention should be given to the study of virology, nutrition, poultry, and public health. They should be major courses. With intelligent instruction and inspiration, the student's interest in these courses would be awakened and a certain number should be encouraged to take graduate training in these specialized fields. We need graduates to fill the ranks of the profession. Veterinary medicine as a career provides an interesting and alluring field. The colleges have, rightly, raised the standards for admission. Nevertheless, I believe the educators are making a serious mistake in placing too much emphasis on scholastic attainment and too little on rural background, personality, and psychological attitude of the applicant in relation to the true objectives of organized veterinary medicine. There is no place for the applicant who takes up veterinary medicine indifferently, actuated solely by the thought that a living must be earned one way or another. Neither is there a place for the one who has uppermost in mind the lure of gold and the urge to get rich quickly. Only the rewards of professional service rendered and of a successful career and a respected position can be considered, for rarely does a veterinarian become wealthy.

The applicant must have the inherent desire to put service before self, supported by the proper mental, physical, and moral qualities, and the determination to accept the hardships of professional life as well as its pleasures and advantages.

The students and educators place too much of a premium on a diploma. Graduation is merely a ceremony of passing through a door into a lifelong career of continuous, progressive, educational experience.

THE FACULTY

In general, most of the veterinary colleges are operating with skeleton faculties. This can be attributed in part to wartime conditions in which a considerable number of the younger members served in the Army. On discharge, some chose practice rather than teaching. Furthermore, depletion of faculty staffs has resulted because salary increases, particularly in the lower teaching brackets, have not been in proportion to the rapid advances of the high cost of living. A condition of poor morale is observed on the faculties of many of our institutions, due to the system of a limited salary scale and overburdened teaching demands. The policy of most universities is to fix salary scale for all colleges, divisions and departments, such as English, history, economics, etc. Under such a system there is little inducement for young professional men to adopt educational work as a career. Responsibility for correction of these faults rests with the administrative authorities of the university or college. They must recognize that salary is based on supply and demand, that we occupy a professional status in which the salaries should be materially increased over other fields. It is not unusual for a veterinary graduate in his first year of practice to make more than a dean of a college. A key man, at a substantial salary, is worth several average men at a meager stipend. This should be forcibly brought to the attention of university and college administrative authorities.

Institutional rheumatism is frequently the result of tradition and pride. The promiscuous inbreeding evident in many of our colleges should be discouraged. Introduction of new ideas, methods, and techniques is a stimulating and potent influence. It is not unusual to find that the decadent members of a faculty resent the intrusion of new outside blood. It isn't traditional. God bless them.

The practice of employing first year graduates to assume responsible teaching positions lowers our educational standards and cannot be condoned. Any well-balanced faculty should have competent men in the middle and upper brackets of all departments. Assistants should be recruited from young men who are on half-time research. Those who have demonstrated superior qualifications and initiative should be encouraged to follow research and teaching.

Teaching and research flourish when they sustain each other. In clinical sciences there is the continuous exposure to the

hidden and unanswered questions. All members of teaching staffs should be afforded the time and opportunity for pursuing research, and men engaged primarily in research should have teaching duties. Research awakens and promotes exhaustive reading and stimulates active thinking in workers with progressive ideas; it results in more critical and inspiring teaching methods and in less of the superficial text-book teaching, which leads to stagnation. Research promotes closer coöperation and integration between preclinical and clinical courses. This is a unity that is highly essential, yet lacking in a majority of our veterinary colleges.

The beneficial deductions and lessons on research projects and their progress are not conveyed to the undergraduate at many of our institutions. This information is not only enlightening to the student but makes him research conscious and awakens a desire for more critical and accurate knowledge. Truthful knowledge of fundamental detail is essential to better crystallization of principles which will expose some of the mysteries of unrelated facts. To give special lectures on this work will broaden the viewpoint of the research worker. It will also strengthen the college intellectually by stimuating thought and producing progressive ideas, and by grouping active workers. This is a most valuable asset and gives to the colleges a prestige which attracts veterinary men and students.

New Veterinary Colleges

We are all conscious of the cultivated interest on the part of ex-service men and high school graduates in veterinary medicine. Only a fraction of the applicants at present are able to matriculate in our colleges. So many applicants being denied admission has brought pressure on various colleges and universities to establish a veterinary school. Within the last two months, two states have announced the opening of a veterinary college which will accept a beginning class this fall. This is a most regrettable and unfortunate situation. Hasty action on the part of these administrative bodies demonstrate little conception or knowledge of what constitutes a modern veterinary college. A number of factors should be given careful consideration and deliberation. Are the administrative authorities and state legislative bodies aware of the tremendous financial outlay necessary for the building of a modern veterinary college that will meet the minimum requirements of the American Veterinary Medical Association? Can an adequately trained and competent staff be assembled? Is the location of the college such that a clinic can be developed and maintained for proper instruction? Do the needs for veterinary service by the livestock industry warrant the expenditure, and will the state absorb the continuous flow of graduates from year to year?

The building program throughout the country is such that new buildings, which will meet the standards of a modern veterinary college, cannot be erected at present. Makeshift buildings and meager equipment cannot be condoned. Apparently, little thought has been given to the finding and employing of a veterinary faculty. The established colleges are understaffed. At present, it is most difficult to find replacements for current resignations and retirements. For example there are twenty positions to be filled in one of our institutions. The natural recourse of raiding faculties of established institutions decidedly weakens and undermines our professional and educational standards.

This sudden impulse to dot the country with veterinary colleges is most unfortunate. Veterinary colleges are not created overnight. They must be planted in fertile ground and properly nourished for growth. In most instances, it appears to be ill conceived and premature on the part of administrative authorities. One can predict that the rush of applicants will continue for another year or two at the most. It will then subside to the prewar status.

Research

It has been said that modern medicine is conspicuous for a bewildering profusion and confusion of facts and ideas. A true analysis of our professional knowledge is a shock to our pride when we realize how little we know of the etiology and manifestations of disease. Some, we understand more or less completely. In others we have sufficient knowledge supported by therapeutic results to satisfy our egotism, yet we must admit we are deceiving ourselves as to a true understanding of many of the causes and pathological manifestations. Many diseases still remain, of which our knowledge is purely theoretical. When

combined with the frailties of the human mind, the long and continuous exposure to these theoretical aspects, unsound as they may be, becomes apparently factual. Much of this seemingly factual knowledge about disease conditions, which are not understood, is accepted from vague descriptions in textbooks, journals, and repeated teaching. In medical science it has been said that what is true today is very likely to be proved false tomorrow. Of all the branches of medical science, veterinary medicine should be the leader in research. We have within our province unlimited fields and materials for exploration in basic and clinical research that can be approached and illustrated within the given species as well as in experimental animals.

We speak apologetically about the contributions to research that have been made by the profession. In an effort to stimulate research, the American Veterinary Medical Association has recently inaugurated a campaign to raise $100,000 within its own membership. To date, the results have been most gratifying. With the establishment of this fund as a nucleus it is hoped that larger funds will be contributed by outside interests sympathetic to veterinary research.

We need to encourage the desire for research on the part of the graduate veterinarian. Relatively few are willing to sacrifice the time for doing advanced work on many urgent problems. There are, undoubtedly, certain reasons for this attitude. Most recent graduates are in such financial straits that, regardless of their natural inclination to pursue graduate study, they are forced to look to more lucrative fields.

Fellowships should not be granted on a dollar and cents basis, but the stipend should be sufficient to supply the necessities, and some of the comforts, of life, allowing the resident to assume and present the appearance and dignity of a professional man. Prior to the war, failure to provide these did more to discourage the research-minded student than any other. The mental anxiety of a worker who is striving to live with dignity on inadequate funds is not conducive to progressive research atmosphere.

We must seek out youth for this work. However, there has been too little consideration given to skill, experience, and practical judgment. The graduate has not had the opportunity to develop any of these prerequisites for he has always been an observer. His clinical experience is confined to the sheltered atmosphere of the classroom. He has not learned the lessons of life in practical experience through trial and error, the disillusionments, the handicaps, and when to be wisely skeptical as well as an intelligent believer. A year or two of experience in the field before research work is undertaken is of inestimable value. It gives the individual a broad viewpoint which tends to develop a mind critical of new or purported facts.

The research worker should have an inborn inquisitive and imaginative mind, combined with thorough learning and an ample exposure to clinical medicine and full appreciation of it. He should recognize reliable sources of information with intellectual honesty in making critical deductions and not superficial observations, recognizing the fact that negative results are beneficial and that truth must not be distorted. The research projects should be well planned, allowing freedom of initiative, independent thought, and judgment; all of this to be done under adequate facilities with competent and experienced direction.

Problems in basic and clinical research should be pursued with thought of immediate advantage to the practitioner who serves the livestock industry and the pet owners.

There must be a closer relationship between the research worker and the clinician. The clinician has much to give to research and independent investigation is commonly a waste of money, time, and effort.

Graduate work of questionable character is frequently done for the sole purpose of entrée to a better position and an increase in salary. In fact, advanced degrees are nothing short of a racket in some institutions. Too often graduate work is done through the microscope to the exclusion of the varied clinical picture. There is much hasty and nebulous work reported in an effort to get it on the press, and, above all, too much duplication of scientific endeavor on the same subject when other important fields remain untouched. Unfortunately, we often know more of the application of research to rats or mice than to our livestock or pets, which make it difficult for the clinician to base a sound opinion and apply it to diagnosis and treatment. Responsibility for the correction of the faults rests with the fellowship committee, admin-

istrative officers, graduate faculty, and department heads.

We fully appreciate the problematic uncertainty or factor that is encountered due to variation of species. It is agreed that laboratory animals may be utilized, but the final proof comes only when amply applied to the disease condition of the particular species under investigation. Veterinary medicine enjoys this advantage over human medicine.

The prize is not another degree to one's name, nor a key to hang on a watchchain for entrée to a bigger salary in a possibly unearned position. The goal is in the thrill and pleasure of achievement and in rendering a service unselfishly.

STATE VETERINARY SERVICE

One of the weakest links in organized veterinary medicine is state veterinary service. Throughout the country it varies from good, to fair, to lackadaisical, to corrupt. In some states the objective and organization do not lend themselves to efficient and honest public service. These organizations are in the clutches of politically influential groups in which the office of state veterinarian is simply tolerated in name, and is utilized by ambitious groups for protection of their own selfish interests and ulterior motives. Political domination is often associated with inefficiency, extravagance, and waste of public funds.

Frequently, the appointees of the sanitary boards consist of men who represent only one group of the livestock industry and ignore other interests. Often the state veterinarian is relegated to a subservient position by having policies imposed on him by a board that is neither intelligently informed nor qualified to pass on questions pertaining to animal disease control and public health. What I have to say is not applicable to all, but the conditions cited are present in many states. Some of the abuses and irregularities showing the futility of state veterinary service are well known and on record. The tenure of office of the average state veterinarian is insecure and is often dependent upon political whims. The appointee has frequently no special training in disease-control work. There is little or no incentive to outline an intelligent, practical, and progressive program. The inclination is to ride the wave and follow the dictates of the political supporters. On many occasions the office is abused in order to give free service for the benefit of the political few.

Many state veterinarians fail to coöperate with the practitioners and assume autocratic methods that lead to the distrust of both factions. In some states, the systems of reports are ambiguous and make it necessary to follow regulations to the letter rather than to stress the principle involved. Practitioners are unable to use certain vaccines and viruses, while the nostrum vendors and farmers enjoy immunity in the promiscuous and injudicious use of biological products without regard to effect on a disease-control program.

The profession is confronted with the refusal to accept the accuracy of tests made by certain state institutional laboratories that are frequently better qualified than the personnel in the so-called official state laboratory. We find various state and federal regulations regarding interstate shipment of livestock based on railroad methods which are not applied to truckers. At present, the trucker and sales rings are under no control concerning the indiscriminate dissemination of disease. There is evasion of the law amounting to a hoax in which infected breeding animals are shipped interstate as feeders. The methods of identification of infected animals are a travesty.

We can speak apologetically of the success of our brucellosis program. In one of our rich livestock midwestern states, $10,000,000 has been spent on its control and eradication since 1936. Yet after ten years there is a higher incidence of brucellosis than previous to the time when the program was initiated.

As a profession, we can point with pride to the eradication of bovine tuberculosis. Recently, ineffective and delayed control measures in some of our states have resulted in an increase of the disease in cattle. Since hidden sources of infection still exist, the testing of animals every three years or at longer intervals is positively a dangerous policy. Our present knowledge of this disease is contrary to such a procedure.

In general the salaries of state veterinarians and their deputies are not commensurate with the responsibilities of the office and services rendered. The annual income from livestock and poultry in one rich agricultural state is approximately

$500,000,000 which represents 72 per cent of the entire income from agriculture. Despite the fact that the chief reasons for losses to the livestock industry is disease, yet the statutes of the state in question provide that the salary of the state veterinarian, charged with control of animal diseases, be $3,600 per annum. In one of the largest livestock states in the Union the salary of the same official is $2,400. In still another the office of state veterinarian charged with control of animal diseases, calls for a salary of $1,400. Such token salaries indicate the low esteem in which the office is held and do not promote competent and efficient veterinary service. In some cases, to induce capable men to remain in office, additional funds have been supplied by state veterinary associations. In other instances, these men have become nostrum vendors and use their position to further the sale of biological products and therapeutic agents to all who will buy.

We are all aware of the sterility, ineffectiveness, and fundamental inadequacies of current intra and interstate regulatory measures. Not only has there been a demand by the veterinary profession for uniform regulatory laws but now there is the same urgent demand from stockmen.

Organized veterinary medicine stands for the projection of highest ideals. These we believe will be realized by efficient administration and an intelligent, progressive, practical, and honest program. This will furthermore serve the best interests of the livestock industry and public health.

Our objectives are: continuity of service free from political influence and obligation; salary commensurate with the importance and responsibility of the position; equal representation of all branches of the livestock industry on sanitary boards; definite liaison with the practicing veterinarian; recognition of free enterprise with less encroachment on the practitioner; closer coöperation between regulatory officials and state colleges on matters of diagnostic service, education, and research; elimination of intrastate as well as interstate spread of disease; stringent and effective legislation that will apply to the trucking of livestock; prevention of sales rings becoming dumping grounds for diseased animals; restriction to the veterinarian of viruses and live culture vaccines that are a public health menace or capable of transmission of animal disease.

Joint responsibility of federal, state, and the local veterinarians is necessary as the basic objective in the conservation and development of animal resources and food. This has to be supported by education and proper public relations with the livestock industry. We must lead and not follow.

(Dr. Farquharson's message will be continued in the October issue.)

The Division of Biology and Agriculture, N.R.C.

The recently organized Division of Biology and Agriculture of the National Research Council, a federacy of going biological societies, should certainly be regaled by seekers of knowledge about living things, such, for example, as the veterinary profession. Note the array:

Poultry Science Association
Botanical Society of America
Genetics Society of America
Entomological Society of America
Mycological Society of America
Wildlife Society
American Veterinary Medical Association
American Society of Animal Production
American Society of Zoölogists
American Society of Parasitologists
American Physiological Society
Association of Economic Entomologists
American Phytopathological Society
Society of American Pathologists
Zoölogical Society of America
American Dairy Science Association
American Society of Biological Chemists
American Genetic Association
American Society of Mammalologists
American Institute of Nutrition
And several others.

To veterinary medicine, the influence of this confederation is bound to be tremendous. Its researches, intelligently put to work, will map out the program of food production—of man's ability to survive. Quoting from a bimonthly report (May, 1946): "Why does not America meet its commitments for food exports? The American contribution to the food of the world continues to lag far behind the Nation's promises." The answer is that individual societies are not meeting the common needs through biology as a science—as a profession united for the common purpose of providing food and maintaining health.

These societies cover extensive territory, much unexplored terrain, and not a small amount of disputed ground. The strong aggregation should become a powerful "bull-dozer" to level things off. For example, all may not agree that the semi-starvation levels to which a large proportion of the world's population has fallen is going to be ameliorated by withdrawing cereal grain from livestock.

Multiplicity of Drug Names

From a report of the Council of Pharmacy and Chemistry of the American Medical Association we quote: "Medical science is promoted by the use of a single name for the same drug, based on scientific principles and freely available to all. This would avoid needless tax on memory with its attendant confusion and errors. Experience has shown, however, that restriction to one proprietary name tends to unduly prolong a monopoly by a single firm and prevents control of the Council over competing brands, which could be made acceptable except that they employ competing proprietary names."

The Council has, therefore, deemed it advisable to accept several names for the same article, provided the name is not given more emphasis in advertising than the drug justifies.

Sanitary Inspection of Eggs

The hen's egg, from the standpoint of the food hygienist and inspector, is an untouched product, notwithstanding that Salmonella and other genera of pathogens have been incriminated as detrimental to human health. If avian tuberculosis is acquitted as a menace to man (which may not be correct), the Salmonella make up a group of organisms that is no longer dismissed in the study of foods. Besides the notoriously ubiquitous *Salmonella pullorum* which may or may not be harmful to the consumer of eggs, account must be taken of *S. senftenberg, S. bareilly, S. oranienburg, S. typhimurium, S. thompson, S. minnesota, S. newport, S. manhattan, et al.*, which have been isolated from American and Chinese egg powder (*Am. J. Pub. Health, 36*, May 1946: 451-460) and which were present in the egg liquid prior to drying. Emphasized is the fact that eggs other than hard boiled and omelets are not sterilized by cooking. The medium and soft-boiled, the ordinary fried egg, the coddled egg, the poached egg, and the delectable eggnog containing these organisms are not sterilized according to critical experimental tests. It required ten minutes of boiling to kill *S. enteritidis* and *S. paratyphi* in duck eggs (*Tijdschr. v. Diergeneesk., 67*, 1940: 280) and these bacteria have resisted heating for twenty minutes at 149 F. In fact, there is no lack of evidence that this common article of the human dietary, as well as poultry meat itself, is an undeveloped field of food hygiene. This is an untouched "business" of veterinary science, which officials entrusted with food inspection should not endeavor to bypass in the pursuit of their duties as much as the industry concerned may object. The food inspectors should stand squarely between the industry concerned and the people whose health they are expected to protect.

Animal Population and Veterinary Education in 1850

The seventh census—1850—of the United States, or twenty-five years before there was a viable veterinary college in this country and twelve years before one was founded in Canada, recorded the animal population as follows:

Horses	2,335,358
Mules and asses	559,229
Milk cows	6,392,044
Work oxen	1,699,241
Other cattle	10,268,856
Sheep	21,721,814
Swine	30,316,608

The total value of this animal population was $543,969,420.

At the same time, Great Britain had two veterinary colleges (London 1791 and Edinburgh 1827) and the Royal College of Veterinary Surgeons (1844) to regulate admission into the veterinary profession, while their animal population was much less than that of the United States; for example, the horse population in Great Britain in 1850 was 839,250, or 43,000 fewer than in 1840, due mostly to a decline in riding and carriage horses, our statistician states.

Some Highlights From Papers

delivered at the

83rd Annual Meeting, Boston, Aug. 18-22, 1946

General Sessions

As a member of the AVMA, you have a responsibility to your community, to your fellow veterinarian, and to society in general. Such membership implies that you will render a complete veterinary service to the livestock owners of your community, to the owners of pets, and to the consumers of foods of animal origin produced or consumed in that community.—*H. L. Foust, D. V. M.*

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Penicillin inhibits cell division, but does not kill bacteria. Resistance to penicillin may be acquired as a result of cultivation of susceptible bacteria in gradually increasing concentration of the drug and by prolonged therapy, or resistance may be found in bacteria which have not previously contacted penicillin. Gram-positive bacteria, with exceptions, are more susceptible than the gram-negative.—*I. A. Merchant, D. V. M.*, and *R. A. Packer, D. V. M.*

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Three diseases of primary interest to livestock owners of Korea are: rinderpest, fowl pest, and third virus disease. The latter is a disease of swine which causes anemia and icterus, affects pigs under 3 months of age, and has an average mortality of 50 per cent of affected animals. A hyperimmune serum is available and effective. First and second virus diseases of swine are hog cholera and swine influenza. —*Major Russell M. Madison V.C.*

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Streptomycin was effective in controlling experimental tuberculosis, brucellosis, leptospirosis, tularemia, and salmonellosis in laboratory animals, but its use in domestic animals must be based on intensive study of dosage, absorption, rate of excretion, and therapeutic efficacy in the infections of the various species. Many organisms acquire a resistance to streptomycin *in vivo* and *in vitro*.—*A. G. Karlson, D. V. M.*, and *Wm. H. Feldman, D. V. M.*

Studies conducted by the Food and Drug Administration indicate that in mice infected with *Escherichia typhosa* certain doses of streptomycin increase the fatality rate, and this may have some bearing on the proper dosage in human diseases. All lots produced are subjected to rigid tests for purity, potency, and other factors.—*H. Welch, Ph. D.*, and *Wm. A. Randall, Ph. D.*

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By an alternating or zigzag type of injection, rinderpest could be made pathogenic for rabbits, which are usually resistant to bovine strains. This is a new technique for adapting virus strains by injecting alternately into animals of different species and may prove useful in other diseases.—*R. E. Shope, M. D.*

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Colostrum is exceptionally rich in globulin, vitamin A, and riboflavin. These substances are permeable through the intestinal wall, and they can be used directly by the tissues of the calf. Moreover, they are substances of great importance to the calf, since the tissues contain inadequate amounts of them and since the newborn calf is not able to synthesize them from other feed sources.—*T. S. Sutton, Ph. D.*

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The actual measures necessary to control rabies are known. It is the manner of organization and maintenance of the program that require attention. There are two weapons which are useful to combat rabies: dog control and mass vaccination. The problem resolves itself into one of human relations, for we must secure the confidence of the average person in the motives prompting the measures advocated.—*A. Zeissig, D.V.M.*

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One month after General MacArthur's occupation forces landed, a reconstruction policy for Japan and Korea was inaugurated. The Veterinary Affairs Division advises on all matters pertaining to animal health, animal diseases hazardous to human health, and to meat and other products of animal origin for civilian consumption.

Japan has 2,878 licensed veterinarians, graduate and nongraduate, and 23 veterinary colleges.—*Colonel Oness H. Dixon, Jr., V.C.*

Section on General Practice

In an experimental herd established in 1936, calves have been raised on milk from cows with udders that are infected with streptococci and staphylococci. To date, 18 heifers so raised have freshened, and while bacteria are frequently found on cultures of the milk before and soon after parturition, none of the udders have been sufficiently damaged to disqualify them for milk production.—*S. D. Johnson, D. V. M.*

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A recovery rate of 95 per cent was experienced in the treatment of 122 cases of hemorrhagic septicemia and/or pneumonia in mature cows following the use of sulfamerazine, while 93 per cent of a group of 27 calves responded. Sulfamerazine is effective in smaller doses at longer intervals than other sulfonamide drugs.—*J. L. McAuliff, D. V. M.*

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To the general practitioner, poultry practice offers a challenge and an obligation. —*C. H. Smith, M. D. C.*

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Observation of the entire flock is basic to a correct diagnosis.—*P. V. Neuzil, D. V. M.*

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Curled toe is due to riboflavin deficiency. Powdered milk or whey will supply this factor in abundance.—*Hugh Hurst, D. V. M.*

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Fowlpox vaccine produces an immunity that endures for the average life of the bird.—*E. M. Dickinson, D. V. M.*

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A respiratory disease, followed by nervous symptoms, should suggest that Newcastle disease may be present.—*F. R. Beaudette, D. V. M.*

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It is unusual to encounter a dairy farmer who has any appreciation of the importance of providing any sort of quarantine barrier which might be used to protect his established herd from diseases brought in by purchased additions. Therefore, developing cases represent the most common method of spreading barn itch—which includes all types of mange, all kinds of lice, ringworm, and anything that makes cows itch.—*D. W. Baker, D. V. M.*

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The classical symptoms of milk fever can be produced by feeding sodium carbonate to normal, nonparturient cows. In cows weighing less than 1,000 lb., the condition can be corrected by administering 40 Gm. of chlor-ethamin by mouth morning and evening for two days following the usual calcium injection.—*A. H. Craige, Jr., V. M. D.*, and *I. V. Stoll, V. M. D.*

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The blood test for brucellosis in swine is useful only as a herd index. When infection is disclosed, the entire unit must be considered to be infected. A control program based on removal of pigs from infected sows at weaning time, segregation of reactor pigs from clean ones, retesting of breeding stock at time of service, and mating of negative animals only has been successful.—*L. M. Hutchings, D. V. M.*

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Brucella vaccination has been the only means of salvaging many herds where the owner could not bear the economic burden of a test and slaughter program. It has given many owners a chance to stay in the cattle business. Cattle vaccinated as calves usually show greater resistance to brucellosis when exposed to the disease.—*L. A. Dykstra, D. V. M.*

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It is unfortunate that the advantages of vaccination cannot be claimed without accepting the limitations, and it is equally unfortunate that there is a distinct tendency to publicize the advantages only. Vaccination sometimes produces permanent reactors; it does not always produce a lasting immunity; in clean herds, it may possibly spread infection to adult animals; and it is too frequently substituted for all other control measures.—*R. R. Birch, D. V. M.*

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Muscular dystrophy (white muscle disease) of young calves, occurring in semi-range beef herds, was seen only when pregnant females were required to subsist mainly on inferior hay during the latter half of gestation and for several weeks after calving had started.—*L. R. Vawter, D. V. M.*, and *Edward Records, V. M. D.*

Section on Sanitary Science and Food Hygiene

Successful control of communicable disease of domestic animals requires such fundamental training as: ability to diagnose the disease promptly and accurately; ability to recognize and identify the positive agent of the disease; knowledge of the manner in which disease can and does spread; and the extent to which the disease already exists in the area where control is to be established.—*R. L. West, D. V. M.*

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Fish autolize or age in ice as much as meat does at 70 F. Fresh fish have a bright appearance, eyes are full and clear without opacity, gills bright red, gill covers and mouth closed, scales glistening and adherent, the flesh firm, elastic, and tight on the bones. Freezing does not improve the quality of fish.—*Colonel Jesse D. Derrick, V.C.*

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Veterinarians are intimately concerned with opportunities for introducing diseased animals and vectors of disease, and with garbage disposal, now that pet animals, baby chicks, fur animals, and even cattle are being transported by air. Quarantine measures are essential to replace one of the older guards against introduction of disease—time.—*Lieutenant Colonel B. D. Blood, V.C.*

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Liver abscesses in calves develop in fattening pens and on range. They are preceded by formation of telangiectasis and sawdust. Experimental data suggest that diminution of reserves of vitamin A is a forerunner of telangiectasis and sawdust, and that they, in turn, predispose to abscesses.—*Rue Jensen, D.V.M.*, and *P. R. Frey, Ph. D.*

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Veterinary service in military government in Europe developed: a system of prompt reporting of disease outbreaks, methods of rapidly instituting control measures, and a system of speedy distribution of needed supplies. A number of outbreaks of anthrax, hog cholera, swine erysipelas, foot-and-mouth disease, and other serious diseases were dealt with effectively. —*Lieutenant Colonel F. A. Todd, V.C.*

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When injected with motile trichomonads, intramuscularly or intravenously, at about semiweekly intervals for 16 injections, 9 of 10 heifers appeared to resist infection from intravaginal and intrauterine implantation of Trichomonas. Treated heifers developed immobilization titers of 1 : 4 to 1 : 16, but there appeared to be no connection between this titer and the degree of protection.—*Banner Bill Morgan, Ph. D.*

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Abortions in Brucella-free herds may be caused by *Vibrio fetus*. To test for such infection, blood samples may be subjected to an agglutination test. Tentative interpretation indicates that a titer of 1 : 200 is suspicious, while 1 : 400 is positive. Of 188 blood samples from cows aborting in Brucella-free herds, 49 per cent were negative, 12 per cent suspicious, and 39 per cent positive to vibrionic agglutination.—*W. N. Plastridge, Ph. D.*

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The agglutination titer and opsonic index of calves become high shortly after Brucella vaccination. The agglutination titer usually recedes over a period of eight to twelve months, but the opsonic index remains high for a considerably longer period. In general, it would seem that an animal with a negative agglutination titer and a high opsonic index possesses a high degree of resistance to *Brucella abortus*.—*W. R. LeGrow, D. V. M.*

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Streptomycin was injected intraperitoneally into guinea pigs experimentally infected with *Brucella abortus*. Results were encouraging, although in the dosage used and the intervals set in these trials, it did not prevent or wholly overcome the infection.—*H. L. Gilman, D. V. M.*, and *W. R. LeGrow, D. V. M.*

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Pigs weighing 35 lbs. were protected by 4 cc. of a porcine serum fraction composed of 97.5 per cent gamma globulin and 2.5 per cent beta globulin. Porcine and bovine serum fractions were also demonstrated to possess agglutinins for *Brucella suis* and *Brucella abortus*. The products may possess value for simultaneous vaccination with live organisms or as neutralizing agents in active outbreaks.—*H. S. Cameron, D. V. M.*

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Hypoglycemia was induced by fasting newborn pigs, and whether the condition developed spontaneously or as a result of experimental fasting, it was always accompanied by depletion of hepatic glycogen. Distilled water or physiologic saline solution did not take the place of milk, but glu-

cose solution did. Pigs brooded at 31 C. survived much longer than those held at 15 C. There was no evidence of kidney dysfunction.—*C. C. Morrill, D.V.M.*, and *Jesse Sampson, D.V.M.*

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Horses suffering from periodic ophthalmia (recurrent iridocyclitis) show a pronounced decrease in glucose tolerance, and also significant deviations in the serum proteins—the globulins being increased at the expense of the albumin. There was also a relative lymphocytosis, with concurrent neutrophilia, but no change in the Schilling classification of neutrophils.—*Captain T. O. Roby, V.C.*, and *Major T. C. Jones, V.C.*

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No relationship could be established between outbreaks of hog cholera and the unusual abundance of white grubs in the soil, nor could hog cholera be produced experimentally by feeding larvae of June beetles to the hogs after the grubs had ingested shelled embryos from worms in hogs dead of cholera—*W. E. Swales, B.V. Sc.*, and *R. Gwatkin, D.V. Sc.*

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Penicillin was injected into quarters infected with streptococci, using 200,000 100,000, 50,000, 25,000 and 10,000 Oxford units per quarter and 100 cc., 50 cc., and 20 cc. of physiologic salt as the diluent. The penicillin unitage of the milk was assayed at two-hour intervals for forty-eight hours. —*W. T. S. Thorp, D.V.M., I. J. Uhrik*, and *E. J. Straley, V.M.D.*

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Three sets of quarters giving positive Hotis, microscopic, and blood plate tests for mastitis were treated once with 50,000 units of penicillin in 10 cc., 100 cc., and 500 cc., of sterile distilled water. There was no significant difference in response to treatment.—*J. J. Porter, D.V.M.*, and *A. C. Kelman, D.V.M.*

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Two herds of equal size, maintained under almost identical conditions, have been studied for seven years. The rise and fall of infection was related to the average age of the herd, indicating that age was the major predisposing or limiting factor in the spread of streptococcic infections in these herds during this period. — *J. M. Murphy, V.M.D.*

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Treatment of anaplasmosis with Clorarsen, an organic arsenic compound, has given encouraging results, except in bulls. No product has been found which destroys the carrier stage. Trials have been made with sulfanilamide, sulfathiazole, sulfapyridine, silver oxide, and a malariacide. Dosage, method of administration, and other drugs need to be studied.—*L. J. Poelma, D.V.M., C. L. Everson, D.V.M., K. S Wilcox, Ph.D., and A. L. Brueckner, V.M.D.*

Section on Small Animals

Geriatrics is the science and art of medical and surgical treatment of the aged patient. The principal diseases of this field in canine medicine are those of the heart, of the lung, arthritis, chronic nephritis, vitamin deficiencies, and endocrine disturbances. Extra care must be used in administering anesthetics, in dentistry, in surgery, and in medication of dogs of advanced age.—*G. B. Schnelle, V.M.D.*

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Mammary gland tumor is the most common ailment of non-spayed bitches more than 5 years old, but it rarely occurs in spayed females. Prompt surgical removal is recommended on the basis of 123 cases. Many tumors are malignant, so that metastasis must always be considered a possibility.—*Wayne Riser, D. V. M.*

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Simple irritations of the ear lead to ear diseases, especially in dogs with floppy ears. Treatment is much more effective in the early stages, at which time it is equivalent to surgery in the late stages. Methods of examining, diagnosing, and treating of ear ailments are discussed along with suggestions for feeding and care to prevent such troubles.—*C. E. DeCamp, D. V. M.*

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In the absence of a proved explanation of glaucoma, it is theorized that the albuminoids of the aqueous humor are agglutinated by inflammation, collect in the canal of Schlemm, and lead to increased intraocular pressure by occluding the normal outlet. Operative procedure offers the only permanent relief.—*M. Weadon, V. M. D.*

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Research work correlates the occurrence of canine hysteria with the ration fed and clearly indicates the dietary origin of the disease. Variable effect of natural feedstuffs on the basic requirements need further study. One such experiment has shown that the niacin requirement of the dog

increases rapidly when large amounts of corn are fed.—*W. A. Krehl, Ph. D.*

Section on Poultry

A strain of infectious bronchitis virus adapted to cultivation in the allantoic sac of embryonated chicken eggs was used for producing a virus of greatly increased virulence. Although subjected to freezing, thawing, and lyophilization, when restored to volume with sterile saline solution, it still contained $5x10^3$ m.l.d.'s for chicken embryos in each 0.2 cc.—*C. H. Cunningham, D. V. M.*

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Five of 13 adult hens (38.4%) visibly affected with the ocular form of fowl paralysis (neurolymphomatosis) were found to be carriers of *Escherichia coli* in the blood stream. The blood was fatal to 84 chicks, producing symptoms of acute bacterial infection.—*A. J. Durant, D. V. M.*, and *H. C. McDougle, D. V. M.*

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A mixed whole blood antigen composed of regular and variant (Younie type) strains of *Salmonella pullorum* is suggested for use in variant-infected flocks. In one series of strains studied, variants constituted 22.7 per cent of them. During the first year, 3.5 million doses of the new antigen were satisfactorily used.—*R. Gwatkin, D.V.Sc.*

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A procedure for recognizing and identifying fowl plague is outlined, along with a vaccination technique which may be used in an outbreak. Fowl plague does not now occupy a prominent position, but it may become necessary to differentiate this disease from Newcastle disease.—*H. E. Moses, D. V. M.*

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The virus of Newcastle disease may be recognized by: infectivity for and isolation in chicken embryos and chickens, course of the disease and pathology in chicken embryos and chickens, hemagglutinative activity of red blood cells, cross neutralization and inhibition of agglutination by immune serum, and cross immunity among vaccinated and recovered birds.—*C. A. Brandly, D. V. M.*, and *E. Elizabeth Jones, Ph. D.*

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The pathologic features of fowl plague and of Newcastle disease are such that they must be considered specific and contributory to establishing the disease as separate entities. There are variations to be considered when comparing the European, American, and Asiatic strains of Newcastle disease.—*E. Jungherr, D. M. V.*, and *E. E. Tyzzer, M. D.*

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Studies with quail chicks have shown that the particle size and the quality of physical elements in the feed are just as important as the nutrient value. Enteritis of mechanical origin, from sharp elements in the feed, was the most common type of injury. A feed mixture graded on a 3/32-inch screen gave best results.—*D. R. Coburn, D. V. M.*, and *R. B. Nestler, B. S.*

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Propylene glycol, a safe, nonirritant, nontoxic organic material used for the control of airborne infections in air raid shelters and in barracks has given encouraging results as an incubator fumigant. It was not as effective as formalin, which it may supplement during the hatching period.—*E. N. Moore, D. V. M.*

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Sulfamerazine checked outbreaks of coccidiosis when fed at the rate of 2 Gm. per pound of mash for three days at the first sign of bloody droppings. Secondary outbreaks sometimes occurred seven days after treatment. Under farm conditions, contamination may not be sufficient to guarantee infection, thus leaving the birds susceptible.—*W. E. Swales, B. V. Sc.*

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The use of small dosages of sulfonamides which give enough prophylactic effect to permit a low grade infection to produce active immunity was studied. Results are encouraging, but lesions noted were not consistently related to dose of sulfonamide or coccidial infection.—*W. T. S. Thorp, D. V. M., S. Gordeuk, V. M. D., P. J. Glantz*, and *M. Learned.*

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Certain of the sulfonamide drug reduced the mortality from experimentally induced pullorum disease by about 50 per cent, while having no effect on fowl typhoid infection and little on paratyphoid. The drugs cannot be used indiscriminately, since all caused interference with growth of normal chicks, especially when used for periods sufficiently long to get the retarding effect.—*B. S. Pomeroy, D. V. M., R. Fenstermacher, D. V. M.*, and *M. H. Roepke, Ph. D.*

Section on Surgery and Obstetrics

A figure-eight stitch, using a fine worm gut and a tiny needle, is essential to successful teat surgery—wounds involving the milk duct, teat fistulas, etc. Hard milkers can be relieved, mammary tumors removed, and udder amputations accomplished under proper procedure.—*F. A. Hall, D. V. M.*

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Clinical use of gonadotropins for correction of infertility in domestic animals continues to be disappointing. Evidence that physiologic doses of estrogen stimulate ovarian function is conflicting. Some undesirable results from improper use of estrogens are: ovarian and testicular atrophy, cystic ovaries, nymphomania, abortion, reduced milk flow in lactating cows, and pelvic fractures.—*F. N. Andrews, Ph. D.*

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More frequent resort to rumenotomy is indicated and suggested in impaction and traumatic gastritis. Successful surgery by the general practitioner, under farm conditions, is an excellent practice builder, because it saves the lives of animals which otherwise would die.—*E. C. Moore, D.V. M.*

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To be successful, cesarean section in the cow must be used before the animal is completely exhausted from prolonged labor or damaged by attempts at delivery or embryotomy. Use only epidural and local anesthesia—cows given general anesthesia for this operation remain recumbent and finally die.—*L. A. Gendreau, D. V. M.*

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The importance of artificial insemination to the veterinary profession has reached proportions that demand the serious consideration of every practitioner. The demand for veterinary participation is increasing, because it provides for better supervision of herd health.—*J. G. Hamilton, D. V. M.*

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No work gives the practitioner such a close insight into reproductive problems in a herd, nor puts him into so favorable a position to treat them rationally, as does artificial insemination. Many veterinarians could do it with benefit to their clients and themselves.—*J. A. Henderson, D. V. M.*

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Artificial insemination offers an opportunity for the veterinary practitioner to increase his value to his community. The program is developing rapidly. It does, and will continue to, ask for help from the veterinary profession.—*J. C. Ramge, D. V. M.*

• • •

Veterinary Corps officers, through their knowledge of animal pathology and food hygiene, adapted themselves laudably to the tremendous wartime job of inspecting food for an army of 8 million. They also proved that a veterinarian is more than an animal doctor. He is a professional man of varied, yet related, scientific skills.—*Colonel J. A. McCallam, V. C.*

Revival of International Poultry Congress Proposed

The World's Poultry Science Association, whose board of officers is still intact, is planning to resume the holding of a World's Poultry Congress in 1948 somewhere in Europe. Denmark, Belgium, Switzerland, Norway, and Sweden have been mentioned as possible sites. The congress was held every three years from 1921 to 1939, but the schedule was interrupted by the war. The legislation sponsored by the last congress held at Cleveland, Ohio, is credited (*The Feed Bag*, June, 1946) with the remarkable wartime poultry and egg production.

A House of Many Mansions—Food Production

In an article titled "Friendly Teamwork between Veterinarians and the Feed Men Is Important," Dr. A. H. Groth, director of the USDA Regional Animal Disease Laboratory at Auburn, Ala. (*The Feed Bag*, June, 1946), tells the feed man that feeding the world is a project of many units: farming, farm machinery dealers and manufacturers, the fertilizing industry, the producers of insecticides, marketing and distributing agencies, education and research groups, and others, in which veterinarians are vitally concerned. The feed man is to concern himself with feed hygiene and discourage the habit of medication for real or imaginary ailments where only professional advice backed by experience suffices.

The film library of the American Medical Association supplied 730 motion pictures to 394 meetings during the last fiscal year.

Gleanings from Committee Reports

(The committee reports were presented at the 83rd Annual Meeting in Boston, August 19-22, 1946)

Education.—There is not a veterinary college without a weakness in one department or another. Most of them offer strong or satisfactory courses in the preclinical subjects, but there is a prevailing weakness in the clinical work. The minimum requirements for an approved veterinary school were thoroughly examined and certain changes were recommended that will raise the present educational standards. Six colleges were inspected during the past year, of which four were fully approved and two were conditionally approved.

• • •

Diseases of Sheep.—After dividing sheep problems into three groups to provide for farm flocks, range flocks, and feeder lambs, the Committee has carefully enumerated the diseases and ailments of each group which can not be satisfactorily controlled with information now available. The need for additional information is stressed.

• • •

Diseases of Swine.—The factors responsible for baby pig losses have been reviewed by the Committee, and the best information available for a prompt reduction of these losses is set down in the report. Faulty nutrition and careless management are given equal prominence with infectious diseases, thus emphasizing the possibility for increased income without a corresponding increase in cost of veterinary service.

• • •

Diseases of Wild Animals.—It is known that wildlife can and does act as either a carrier or a reservoir for such diseases as tularemia, rabies, brucellosis, encephalomyelitis, malignant edema, tuberculosis, blackleg, foot-and-mouth disease, anthrax, and certain parasitic diseases. The protection of wildlife against disease therefore presents a primary obligation to the veterinary profession.

• • •

Motion Picture Library.—Three new films have been added to the film library of the AVMA by the Committee during the past year, and more will be acquired from time to time as suitable subject matter comes to the attention of members of the Committee. Anyone having suitable film is invited to express a willingness to have copies made.

• • •

Biological Products.—The Committee has submitted a list of antitoxins, serums, aggressins, diagnostic agents, toxoids, vaccines, viruses, and bacterins which it believes to be acceptable for general use in veterinary practice.

Poultry.—The shortage of protein concentrates and of grains of good quality is cited by the Committee as a reminder that veterinarians should be on the lookout for deficiency diseases during the fall and winter. The finding and identifying of Newcastle disease in an increasing number of states also suggests that this disease should be considered when making a diagnosis in diseased flocks.

• • •

Enforcement of Code of Ethics.—The Committee believes that the Code of Ethics of the AVMA should be clarified, and that it should then be adopted by each constituent organization. At the same time, steps should be taken to encourage compliance with the code, and to enforce compliance or punish violators.

• • •

Legislation.—After full consideration of all its phases, the National Science Foundation proposal for providing federal aid to scientific research has been supported. Efforts have been put forth to insure inclusion of veterinary medical research in the broad field of medical research that will be covered if the act eventually is passed.

• • •

Registry of Veterinary Pathology.—The Army Institute of Pathology offers a diagnostic service for practicing veterinarians and others seriously concerned with disease processes. A total of 877 accessions had been received up to May, 1946, which indicates that many more veterinarians should be availing themselves of the service offered.

• • •

Nomenclature of Diseases.—The Committee is setting up a system for classifying and recording the names and terms used in North America to designate the diseases and disorders of animals. By employing a series of letters and digits, the classifying arrangement includes both topographical and etiological factors. It is similar to the Standard Nomenclature of Diseases endorsed by the American Medical Association.

• • •

Vital Statistics.—The need for more information regarding the morbidity and mortality occurring among livestock on farms and ranches is recognized, and the Committee reports that efforts are being made to develop a practical method of collecting statistical data of this nature.

Historical Sketches and Memoirs

II. The AVMA is 92 years Old, Not 83

(Continued)

L. A. MERILLAT

Chicago, Illinois

3.

Now a secret published for the first time. When the AVMA in 1915 paid Robert Ellis $2,500 for the JOURNAL, there was some grumbling about the purchase price, for it was general gossip that it had been offered to Dr. John F. Devine for $1,000 and also that it came near to being purchased by a Chicago group for $1,200 at the New York meeting of 1913. The Chicago prospects delegated an accountant (Grayson) to get a financial report and clear title to the property through his New York correspondent. The deal fell through when the accountant's report showed that on the day of examination the *Review* had but 600 paid-up subscribers and no tangible assets.

Cost Price of the Journal

This is not a criticism of the officers who bought the JOURNAL. It is a record of the American veterinarian's famous mental laziness in 1915 and of the reason that veterinary magazines had always stood at the brink of bankruptcy, one from the 1850's until well into the twentieth century, let's confess, when the commercial interests began to lend them substantial support (through advertising). Anyhow, at $2,500 the *Review* was a bargain. There was some lingering sentiment to be picked up about having given it up in the 1880's and the inseparable value of age and good will. That the veterinarians of the 1880's wouldn't throw in a few chips for the satisfaction of having a spokesman defending and promoting their cause *is* history, ugly history.

Liautard is on record editorially as claiming to have taken the JOURNAL off the Association's hands to save its financial hide. Others have expressed the view that it was maneuvered out of the Association's hands. No one I can recall ever thought it was philanthropic. Anyhow, "out west", as the profession grew, he had accumulated quite a crowd of critics. The sprouting of opposing colleges didn't help him. Protests against Liautard's *Review* were open and country-wide. Even when it was all we had in current literature, subscriptions were paid grudgingly. Selling it to a book publisher—Sabaston & Murray—was taken as a "way out" of a bad investment, for, in two years the *Review*, or something, took that old firm into insolvency, and brought in a very popular practitioner (Bell) to take over. I'm getting ahead of my story. The breakdown of this part of veterinary history must be reserved for the right sketch, later on.

4.

Information from many sources had to be pieced together to make up an authentic story about the founding of the profession.

1854 or 1863

Whether the veterinary profession stems from the American Veterinary Association founded by Jennings at Philadelphia in 1854 or from the time the new name, United States Veterinary Medical Association, was adopted at New York City in 1863 remains for the Executive Board to settle. The object here is but to furnish a guide to take or reject. The main purpose of this sketch is to record the obtainable facts on the actual proceedings of the Astor House meeting of June 9, 1863, which is generally known as the "founding convention."

5.

Beginning in 1859, Robert Jennings of Bordentown, N. J., and his colleague, Isaiah Michener of Pennsylvania, proposed to expand the jurisdiction of the American Veterinary Association beyond Pennsylvania, New Jersey, and Delaware. At a meeting held at the Wetherill House in Philadelphia, April 28, 1863, plans were laid to hold a meeting in New York City to accomplish that purpose. A resolution was passed directing the secretary to invite practitioners from the adjacent states

The Founding Convention

This is the third in a series of articles entitled "Historical Sketches and Memoirs" by Dr. Merillat, which will appear in the JOURNAL during coming months.

to *the ninth annual meeting at the Astor House in New York City on June 9, 1863.* There was most certainly no hint, in either letter or spirit, that the historic resolution was to become the association's obituary notice nor that its authors were writing their life sentence to professional exile. Forty veterinarians and one layman responded to the invitation and signed the register. The following proceedings took place:

The meeting was called to order at 9:00 a.m. by W. A. Wisdom, an elderly practitioner of Wilmington, Del., Robert Jennings acting as the recording secretary. On motion of C. M. Wood of Boston, John Busteed, M.D., of New York City, was chosen "chairman of the convention, *viva voce*, in the interest of harmony." (The replies to the letter of invitation reveal the existing discord between New York and Philadelphia and among the individual practitioners which any "old timer" will easily believe. The fact that the order of business following the election of a chairman *pro tempore* started by reading the minutes of two previous meetings (annual and semiannual) should be proof enough as to whose meeting it was.)

The following resolution passed at the Philadelphia meeting April 28, 1863, was read:—

> *Resolved* that the friends of veterinary science favorable to *maintaining a national veterinary association* (emphasis mine) for the advancement and diffusion of veterinary knowledge meet in convention at New York City, Tuesday, June 9, 1863, and be it further
> *Resolved* that veterinary surgeons in all parts of the United States and all persons favorable to such an organization be invited to attend the convention.

From what this resolution implies and what it led to in the eighty-three years to follow—the present AVMA—it does seem somewhat ungrateful and irregular to have these precious expressions expunged from the Association's archives all of these years, far afield as that is from the present "religion" and four-square ethics of American veterinarians. However construed, these minutes prove beyond doubt that the meeting from which the AVMA sprang was the 1863 annual meeting of the American Veterinary Association, whose name was changed to United States Veterinary Medical Association in regular parliamentary fashion. Some years later (1898), the name "American" was restored. The more searching historians have opined that Liautard (France), Stickney (London), and Busteed (M.D.), then and there, submerged the Philadelphian association, took charge of veterinary medicine in this country, and saw to it that no meetings must thereafter be held beyond New York-Boston influence. Twenty-seven years of do-nothing, veritable antithesis of the Philadelphia spirit, are of record for the gaze of the curious. Even the big (for that day) Philadelphia meeting held during the Centennial Exposition (1876) went on the records, and stayed there, as having been held in New York City ten days before. The smartest intrigue leads but to smashing defeat.

The following responded to Robert Jennings' invitation and signed the register:

MASSACHUSETTS

William Saunders, Salem	E. F. Thayer,* Boston
J. H. Stickney,* Boston	C. M. Wood,*† Boston
	R. Wood,* Boston

NEW JERSEY

J. M. Budd	R. Jennings†
T. Cooper	R. M. Mankin
J. Dilts	A. Phillips
J. O. Higgins	J. Phillips
	Humphrey Sill

NEW YORK

H. M. Bannister, New York City	Charles Pilgrim, New York City
O. H. Birney, New York City	John Busteed, M.D., New York City
Louis Brandt, New York City	A. S. Copeman, *‡ Utica
John H. Budd, New York City	R. H. Curtis, Brooklyn*
C. Burden,†‡ New York City	G. C. Grice, New York City
A. Liautard,† New York City	A. Large,* Brooklyn
M. Mulligan, New York City	W. C. McCoun, Oyster Bay
	E. Norstrandt, New York City
	Georges Wilkes, Esq., Utica

PENNSYLVANIA

J. C. Eisenwein	George Miller§
R. M. McClure, Philadelphia	Isaiah Michener
	E. H. Palmer

ELSEWHERE

John Arnold, England	J. K. Quickfall, England
G. W. Bowler, Cincinnati, Ohio	E. F. Ripley, Maine
W. A. Wisdom, Wilmington, Del.	

*Past presidents.
†Past secretaries.
‡Past treasurers.
§Also spelled Mellor in some reports.

COMMITTEE ON ARRANGEMENTS

John Busteed	A. Liautard
R. M. Curtis	W. T. McCoun
C. C. Grice	Charles Pilgrim

George Wilkes, Esq.

6.

Officers Elected for One Year

J. H. Stickney, Boston, *president;* R. H. Curtis (N. Y.), William Saunders (Mass.), E. W. Ripley (Me.), R. Jennings (N. J.), W. A. Wisdom (Del.), G. W. Bowler (Ohio), R. M. McClure (Pa.), *vice-presidents;* Alexandre Liautard (N. Y.), *recording secretary;* R. C. McCoun, (N. Y.), Isaiah Michener (Pa.), R. Wood (Mass.), J. C. Walton (N. J.), *corresponding secretaries;* A. Large N. Y.), E. F. Thayer (Mass.), C. M. Wood (Mass.), J. Dilts (N. J.), E. R. Palmer (Pa.), J. C. Eisenwein (Pa.), *censors;* A. S. Copeman (N. Y.), *treasurer.*

From the minutes of the meeting written by Recording Secretary Robert Jennings at the Astor House June 10, the day following the meeting, we quote:

The Committee on Constitution, submitting a code of laws as amended, was adopted for the future government of the Association.

There was considerable discussion on *whether the name should be changed* (italics mine) to the United States Veterinary Medical Association. (The name was changed to maintain harmony between New York and Philadelphia, according to a published report of Robert Jennings.) Dr. Jennings exhibited the ecraseur for the castration of horses, a French invention introduced in the United States by him in 1852, but not favorably received by stock owners. He explained its advantages and workings of the new instrument but it was not appreciated by the convention. Drs. A. S. Copeman and C. M. Wood read interesting papers, after which the meeting adjourned.[8]

The committee that drafted (revised) the first Constitution and By-Laws for the newly named Association was appointed by Chairman Busteed at the first session (June 9) with orders to report the instrument for adoption the following day. The members were:

J. H. Stickney, *Chairman*, Boston
G. W. Bowler, Cincinnati, Ohio
Jacob Dilts, New Jersey
W. A. Wisdom, Wilmington, Del.
A. S. Copeman, Utica, N. Y.
Isaiah Michener, Pennsylvania
E. P. Ripley, Maine
John Busteed, *ex officio*, M.D., New York City

The instrument was read at the closing session and adopted. Its articles and sections were voted on *seriatum* along with some amendments. A vote of thanks was given to chairman Busteed for "efforts and impartiality in organizing the meeting," and also to Robert Jennings and R. M. McClure for their zeal and perseverance in forming the previous meeting (the meeting of April 28 in Philadelphia).

R. M. McClure, of Philadelphia, made an address on "The Origin and Importance of Veterinary Education", and Robert Jennings, of New Jersey, exhibited and explained some pathological specimens. Thus endeth the information I am able to gather about this historic convention.

7.

Recommendations

Although the schedule of meetings and officers of the AVA from 1854 to 1863 were presumably handed over to the newly elected secretary (Liautard) by the retiring secretary, and are probably lost forever, there is no shadow of doubt that the AVMA was founded in 1854 at Philadelphia. Conceding that, it would make the AVMA not only the first veterinary association in this country but also the first of all attempts to found a veterinary profession for the American people. Not to do so is surrendering the credit to the far-seeing men to whom the credit cannot be honorably denied. To be blunt and not misunderstood, the founders of our veterinary profession and national society are *Robert Jennings and Isaiah Michener, not J. H. Stickney and Alexandre Liautard whose names we have put at the head of the list year after year, in error.*

Critics of my personal views on the professional life of Liautard, as requested above, will please withhold their criticisms. This sketch is on *education* and *organization* only. In education, I found subtle champions of low standards long after consensus demurred, and in organization not a few nonconformists to the kind of harmony and unity that hurts the pocketbook. The need of watching over the performance of these two groups does not grow less important.

It is further recommended that on the list of ex-secretaries, "1864 R. Jennings, New York" be changed to "1864 Robert Jennings, New Jersey," because as previously told, Jennings never lived in New York. Moreover, the list of meetings should show that the annual meeting of Sept. 20-21, 1876, should be credited to Philadelphia, and thus distinguish it from the preconvention meeting held in the office of the American Veterinary College on September 10 to (as

alleged) reëlect Liautard to the presidency. As the insinuation was never published, it must be admitted here, at least, as a bit of the long-lasting gossip which once crept into our contests for leadership. From 1863 to 1895, those who stood for low educational standards were prone to block the kind of organization that is hard to control. Loose, weak, small, or none at all, was preferable to large, solid, democratic associations that might be bothersome in the play for students. State support of veterinary colleges was actually denounced in unbelievably bitter words; state associations were neglected, and uniting them into a workable unit was hindered until recent years. In defense of self-interest, there was fear of the growing crowd.

SUMMARY

1) The AVMA was founded in 1854 at Philadelphia as the AVA. Its name was changed to United States Veterinary Medical Association at the 1863 meeting of that association held in New York City, and back to "American" in 1898.

2) The AVA passed a resolution at Philadelphia in April, 1863, directing its secretary and founder, Robert Jennings of New Jersey, to invite practitioners from all over the country to meet at the Astor House in New York City on June 9, 1863, with the object of extending its influence over adjacent states, having acquired members from Pennsylvania, New Jersey, and Delaware, only.

3) Forty-one responded to Jennings' invitation. The minutes of two previous meetings were read and adopted. A revised constitution and by-laws was written and adopted. The names of those present and of the committee members and officers elected are given, also those of the committee on arrangements. Papers were read and addresses were made, mainly on education. Officers were elected for a year. Seven states and England were represented. Names of the conventionists are listed by states.

4) The charge that the *American Veterinary Review* was but the house organ of the American Veterinary College is discussed, without intention to belittle its achievements as a veterinary magazine. With all its editorial faults, it was nevertheless the American veterinarian's "newspaper" and it *did* survive while others perished.

5) The founding of the National Veterinary Medical Association in the 1860's with the declared object of starting state associations and uniting them into a national society, as was eventually done in the 1930's, is introduced and discussed. Facts are mentioned that the *Review* wrote subtle objections to higher educational standards, and denounced and ridiculed the idea of legislatures granting money for veterinary schools.

6) Attempt is made to determine why the records of the founding convention have remained such a blackout that weeks of search through scarce magazines are required to gather the few facts herein contained. The answer to this question is shown to be "involved."

7) These sketches will attempt to show that American veterinary history is not popular because there were difficulties surrounding the founding of a veterinary profession. These have never been frankly approached and discussed. The profession started from nothing and for many years received no public support, and no consistent support from within, until recent years.

Note.—To be of first importance, history, biography, or just news must be accurate. Until 1915, the veterinary profession in this country had no responsible spokesman under its direction and, therefore, published material, like parts of these sketches, may be based upon personal memory and opinions. Reporting errors noted will be appreciated. The author would be pleased to correspond with persons possessing journals of veterinary medicine published before 1880. The object is to tell the truth about veterinary medicine in this country as I have seen it, and as I am able to collect it from scattered places.

The armies of occupation in Germany are encouraging the breeding of horses as an essential step in reconverting agriculture.

An all-steel sulky, unbreakable, weighing but 33 lb., is the latest improvement in harness-horse racing. It is manufactured in Altadena, Calif., and was given a thorough tryout at the Santa Anita and Bay Meadows tracks before being offered to the trade. "Product of expert reinsmen," *The Harness Horse* tells its readers.

Report on Infectious Equine Encephalomyelitis in the United States in 1945

Abstracted from a report (dated June 15, 1946) by B. T. Simms, Chief, United States Bureau of Animal Industry

With this report, the second decade of gathering and reporting of statistical data on infectious equine encephalomyelitis begins. Although the efficiency of the reporting system continues to improve, the number of cases reported in 1945 is lower than in any of the preceding ten years, and is about one-sixth the number reported in 1944.

The 3,212 cases recorded are from 33 states. Drought, or near-drought, in considerable areas of the country during 1945 apparently accounted for the generally decreased incidence; but considerable increases in numbers of horses affected were reported from the south Atlantic and Pacific regions.

Estimates based on production of vaccine and other records would indicate that about 700,000 horses had been vaccinated in 1945, although only about 200,000 were reported specifically to the bureau. It is reported that 34 animals contracted the disease despite vaccination (2 doses).

Comparatively few specimens were submitted for laboratory examination, and only one strain of virus was isolated in the bureau laboratories. This was submitted from Delaware and proved to be eastern type. There are now on record 4 cases originally diagnosed as infectious equine encephalomyelitis that have been proved definitely to be due to rabies virus.

Dr. Wm. McD. Hammon, George Williams Hooper Foundation, San Francisco, has isolated western strains of equine encephalomyelitis virus from a case of encephalitis in man and from 30 separate lots of Culex mosquitoes.

(See pp. 192 and 193 for fig. 1 and table 1.)

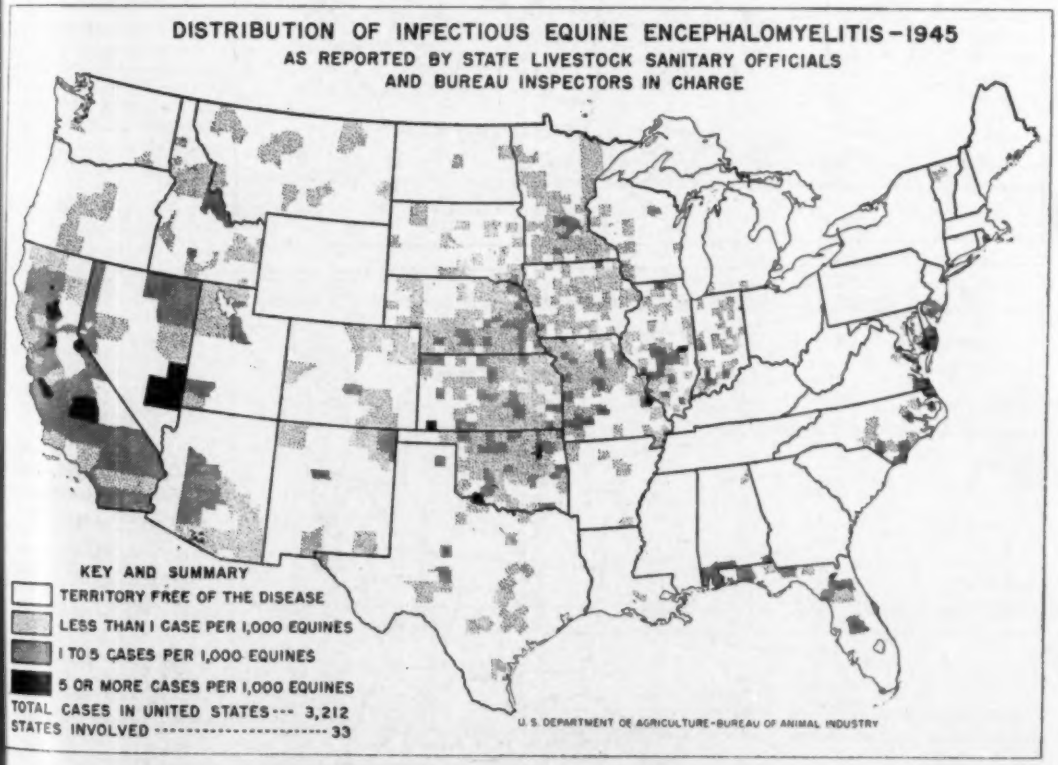
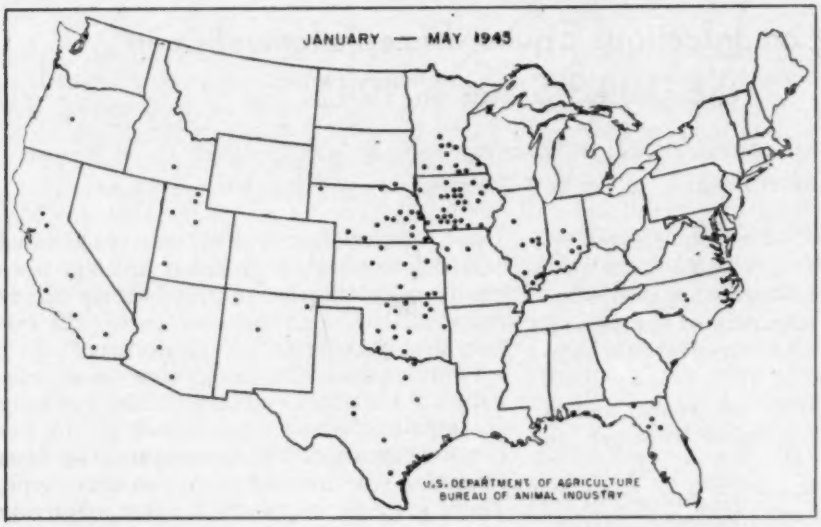
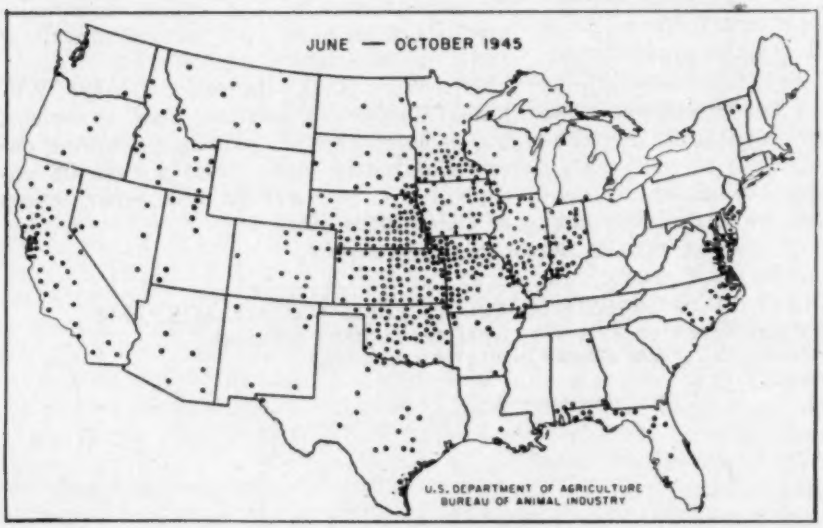

DISTRIBUTION OF INFECTIOUS EQUINE ENCEPHALOMYELITIS - 1945
AS REPORTED BY STATE LIVESTOCK SANITARY OFFICIALS
AND BUREAU INSPECTORS IN CHARGE
KEY AND SUMMARY
TERRITORY FREE OF THE DISEASE
LESS THAN 1 CASE PER 1,000 EQUINES
1 TO 5 CASES PER 1,000 EQUINES
5 OR MORE CASES PER 1,000 EQUINES
TOTAL CASES IN UNITED STATES --- 3,212
STATES INVOLVED ---------- 33
U. S. DEPARTMENT OF AGRICULTURE-BUREAU OF ANIMAL INDUSTRY

FIGURE 2 - DISTRIBUTION AND DEGREE OF INCIDENCE OF INFECTIOUS EQUINE ENCEPHALOMYELITIS, 1945



PRE-EPIZOOTIC PERIOD
CASES REPORTED FOR

JANUARY	2
FEBRUARY	4
MARCH	7
APRIL	31
MAY	159
TOTAL	203



EPIZOOTIC PERIOD
CASES REPORTED FOR

JUNE	295
JULY	495
AUGUST	692
SEPTEMBER	1,027
OCTOBER	408
TOTAL	2,917

POST-EPIZOOTIC PERIOD
CASES REPORTED FOR

NOVEMBER	63
DECEMBER	29
TOTAL	92

Fig. 1—Distribution of reported cases of equine encephalomyelitis according to periods during 1945. Each dot represents a county in which 1 or more cases occurred during the period.

Table 1.—Infectious Equine Encephalomyelitis
Summary of Reports on Incidence and Mortality by States, 1945.

State and division	Horses and mules in affected areas	Animals affected	Cases per 1,000 horses and mules	Total deaths	Deaths per 100 affected animals	Month of report of--- First case	Last case
Maine	---	0	---	0	---	---	---
New Hampshire	---	0	---	0	---	---	---
Vermont	5,368	4	0.7	3	75	Sept.	Sept.
Massachusetts	---	0	---	0	---	---	---
Rhode Island	---	0	---	0	---	---	---
Connecticut	---	0	---	0	---	---	---
New England	5,368	4	0.7	3	75	Sept.	Sept.
New York	---	0	---	0	---	---	---
New Jersey	9,113	26	2.9	26	100	August	October
Pennsylvania	---	0	---	0	---	---	---
Middle Atlantic	9,113	26	2.9	26	100	August	October
Ohio	---	0	---	0	---	---	---
Indiana	111,264	79	0.7	32	40	May	Nov.
Illinois	224,399	203	0.9	57	28	April	Dec.
Michigan	12,454	2	0.2	1	50	July	July
Wisconsin	77,190	15	0.2	6	40	June	August
East North Central	425,307	299	0.7	96	32	April	Dec.
Minnesota	382,171	182	0.5	45	24	April	October
Iowa	358,856	148	0.4	46	31	March	Nov.
Missouri	503,808	485	1.0	133	27	April	October
North Dakota	13,237	2	0.2	1	50	August	August
South Dakota	90,964	36	0.4	7	19	May	Sept.
Nebraska	376,992	284	0.8	73	25	March	Nov.
Kansas	327,426	259	0.8	71	27	May	October
West North Central	2,053,454	1,406	0.7	376	26	March	Nov.
Delaware	7,176	12	1.7	10	83	August	October
Maryland	14,930	180	12.1	172	95	August	October
Virginia	18,955	50	2.6	42	84	June	October
West Virginia	---	0	---	0	---	---	---
North Carolina	66,121	128	1.9	98	76	May	Dec.
South Carolina	---	0	---	0	---	---	---
Georgia	---	0	---	0	---	---	---
Florida	22,931	40	1.7	34	85	Febr.	August
South Atlantic	130,113	410	3.2	356	87	Febr.	Dec.
Kentucky	---	0	---	0	---	---	---
Tennessee	---	0	---	0	---	---	---
Alabama	27,231	36	1.3	36	100	June	Sept.
Mississippi	---	0	---	0	---	---	---
East South Central	27,231	36	1.3	36	100	June	Sept.
Arkansas	43,775	19	0.4	4	21	July	Sept.
Louisiana	3,221	3	0.9	1	33	August	August
Oklahoma	348,056	277	0.8	64	23	Jan.	Dec.
Texas	139,959	38	0.3	15	39	April	October
West South Central	535,011	337	0.6	84	25	Jan.	Dec.
Montana	43,062	12	0.3	6	50	July	Sept.
Idaho	81,379	52	0.6	10	19	May	Nov.
Wyoming	---	0	---	0	---	---	---
Colorado	79,623	24	0.3	8	33	June	Sept.
New Mexico	34,019	30	0.9	11	36	April	Sept.
Arizona	31,331	40	1.3	12	30	Febr.	Sept.
Utah	34,397	60	1.7	24	40	Jan.	October
Nevada	26,576	65	2.4	20	30	August	October
Mountain	330,387	283	0.9	91	32	Jan.	Nov.
Washington	5,892	3	0.5	0	---	August	Sept.
Oregon	13,543	6	0.4	2	33	March	Sept.
California	155,647	402	2.6	95	23	March	Nov.
Pacific	175,082	411	2.3	97	23	March	Nov.
Total or Average	3,691,066	3,212	0.9	1,165	36	Jan.	Dec.

Primary Splenic Endothelial Sarcoma in a Dog

STUART LINDSAY, M.D., and JAMES W. GILMORE, D.V.M.
San Francisco, California

IN THE MOST RECENT REVIEW of primary splenic neoplasms, Bostick[1] was able to find only 1 recorded case occurring in an animal other than man. This instance was a primary leiomyosarcoma of the spleen occurring in a bovine animal and reported by Feldman[2]. The latter author cited no additional cases in his collection of neoplasms of domesticated animals[3]. Because of the scarcity of these tumors in lower animals, a report of primary endothelial sarcoma in a dog seems warranted.

The authors are from the Division of Pathology, University of California Medical School, San Francisco, and Dr. Gilmore's Veterinary Hospital, San Mateo, Calif.

REPORT OF CASE

The dog was a female, wire-haired Fox Terrier, 8 years of age, weighing approximately 5.5 kg. A large tumor mass, palpable both in the left upper abdomen and left costovertebral angle, was the only positive finding on physical examination. The tumor was removed surgically with the animal anesthetized with sodium pentobarbital U.S.P. The splenic origin of the mass was evident. Portions of highly vascular omentum were adherent to the capsule of the tumor. The mass was densely adherent to the retroperitoneal tissues in the region of the left kidney. The liver was normal in appear-

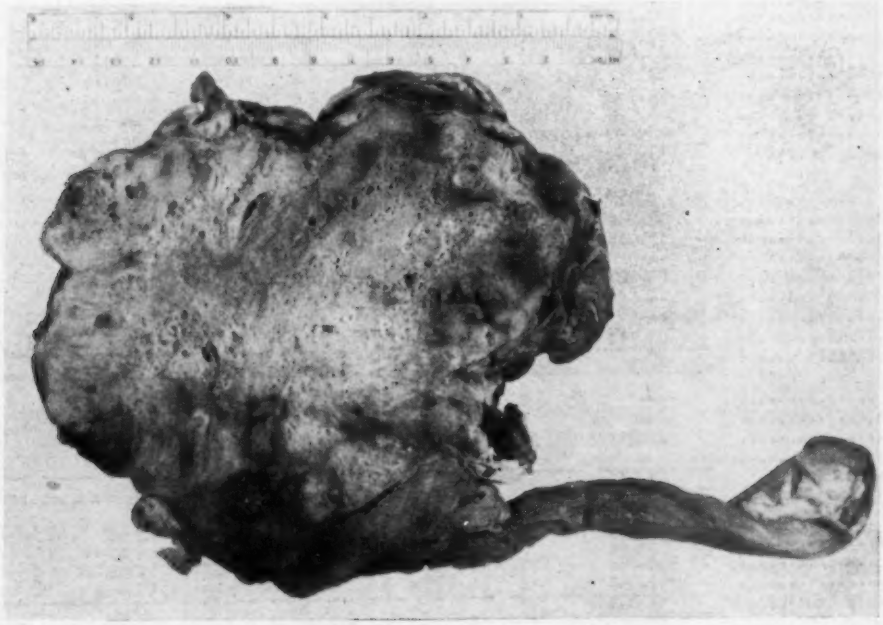


Fig. 1—Spleen and neoplasm. 0.5 reduction.

ance. There were no other intra-abdominal tumors or enlarged lymph nodes.

GROSS EXAMINATION

The specimen was examined after freezing and fixing in Kaiserling's solution. The specimen consisted of a large, irregular, lobulated mass, measuring 17 by 15 by 8.5 cm. and weighing 905 Gm. A thin capsule covered the surface, and there were many adherent masses of omental fat. The surface had a mottled, reddish blue color, for the most part, although there were interspersed yellowish zones representing thickened portions of the capsule. At two points on the surface were ragged perforations of the capsule where the tumor had been attached to the adjacent abdominal viscera. Lying on one surface of the mass was the spleen. This organ measured 19 by 3 by 1 cm. It was apparent that the tumor had originated in the splenic tissue and was growing outward from about half of the pedicular splenic surface. The outer surface of the spleen near the tumor was still relatively intact and could be followed for a short distance onto the surface of the mass. When the mass and the spleen were sectioned together, the involved portion of the spleen showed a replacement of its dark, reddish parenchyma by neoplastic material (fig. 1). The cut surface of the tumor presented a variegated appearance. Toward the periphery it was fibrous, rubbery, and pale; there was a tendency toward a fascicular, radial arrangement of this fibrous tissue. Near the center of the tumor, the neoplastic tissue was less compact and was soft, pale gray, and spongy. Near the junction with the splenic tissue, there was extensive fresh hemorrhagic infiltration. Elsewhere, other zones of hemorrhage appeared older. In addition were small deposits of bright orange lipid material, undoubtedly representing old hemorrhage. Many rounded or oval cystic cavities containing mucoid fluid were present in the central portion of the mass. These had linings which were smooth, pale, and glistening. Some areas toward the center of the tumor had a firm and opaque grayish, fibrous appearance.

MICROSCOPIC EXAMINATION

The capsule was intact but thin. It consisted of strands of hyalinized, connective tissue with relatively few fibroblastic cells. Groups of fat cells were adherent to its surface. The tumor was moderately cellular and composed of closely packed cells which had a moderate tendency to lie in

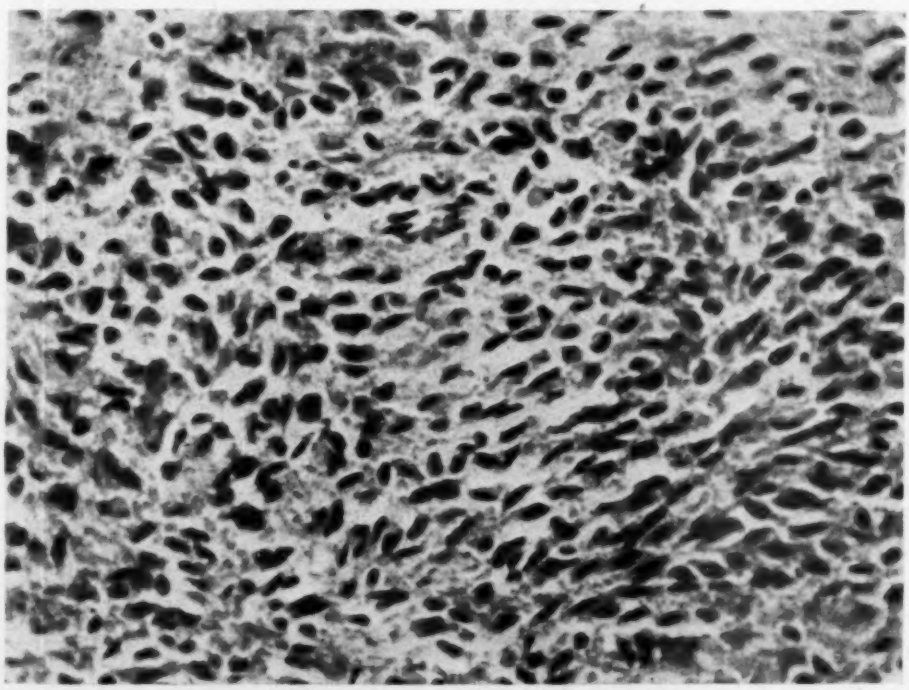


Fig. 2—Hemotoxylin and eosin stain. x 500.

interlacing and intersecting rows (fig. 2). There were many small, cleftlike spaces throughout the neoplasm. Undoubtedly, many of the smaller ones were artefacts, but the larger ones were distinct vascular spaces, often containing blood cells, and lined by cells identical with those about in the surrounding tissue. These neoplastic cells were indistinctly outlined, for the most part, and had a rather scanty, eosinophilic, granular cytoplasm. The nuclei were oval or slightly elongated, were not lobulated, and contained rather abundant, fine, granular, closely packed, chromatin particles. These hyperchromatic nuclei usually contained several small, basophilic nucleoli. While the nuclei, in general, were rather hyperchromatic and moderately pleomorphic, mitotic figures were not abundant. Multinucleated cells were not encountered. The amount of intercellular substance being produced by the cells varied considerably in different areas. With the Laidlaw connective tissue stain, a rich network of delicate reticulum fibers enveloping the individual cells was demonstrated in most parts of the tumor (fig. 3). In other portions, the fibers were larger, coarser, and corresponded to collagenous elements. In still other areas, even fine reticulum fibers were few in number. In some regions were large, irregular pools of eosinophilic, hyaline, protein material which did not stain with Congo red. Within this material were scattered, compressed, neoplastic, cellular elements. Zones of necrosis, old and recent hemorrhage, and large pools of fibrillary fibrin with scattered leucocytes were often encountered, especially toward the center of the tumor. The larger cystic cavities seen in the gross specimen were vascular channels lined by neoplastic cells. They often contained adherent thrombotic masses and, at times, extensions of the neoplastic, endothelial cells into the thrombi had occurred. The splenic tissue adjacent to the tumor was compressed and the pulp atrophic and fibrotic. Numerous macrophages containing blood pigment were present. The neoplasm was fairly sharply demarcated from the splenic parenchyma, but there was no intervening capsule.

COMMENT

The internal structure of the neoplastic cells corresponded to that of endothelial cells. Their fascicular arrangement, their ability to form vascular channels of varying sizes, and their production of reticulum and collagenous intercellular substance

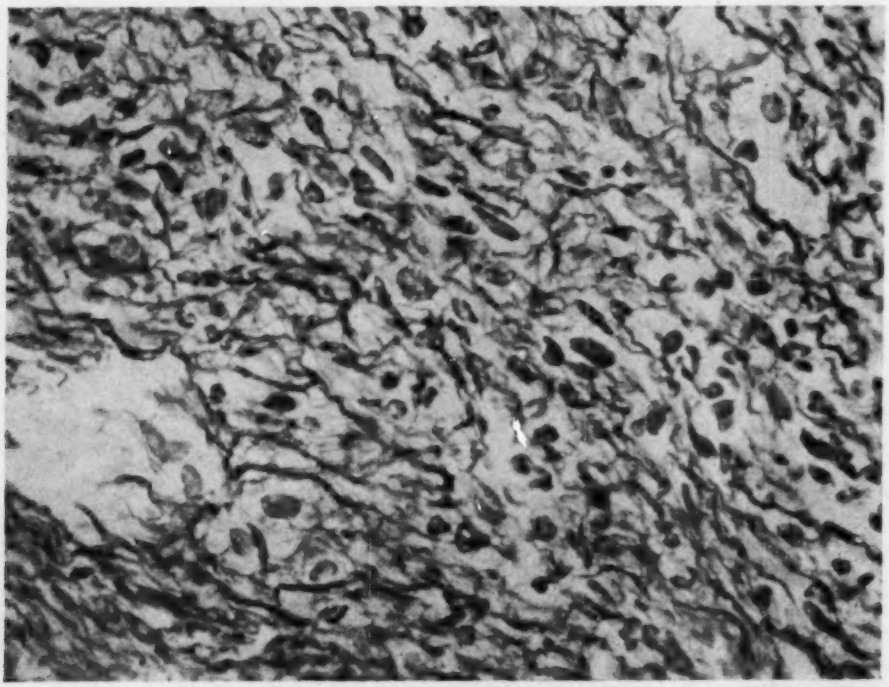


Fig. 3—Laidlaw connective tissue stain. x 500.

were consistent with an endothelial cellular origin. While there was no histologic evidence of frank malignancy, there was moderate cellular pleomorphism and apparent invasion through the capsule, with adherence to other abdominal structures in two areas. With the above criteria, we have classified this neoplasm as an endothelial sarcoma of low grade malignancy. It is interesting to note that the endothelial sarcoma is one of the primary splenic neoplasms most frequently encountered in the human species[1].

SUMMARY

1) A case of primary endothelial sarcoma of the spleen in a dog is described.

2) The neoplasm was of low grade malignancy, and local capsular invasion had occurred. There were no apparent metastases.

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[2]Feldman, W. H.: Leiomyosarcoma of the Spleen in a Bovine. Am. J. Pathol., *4*, (1928): 139-144.

[3]Feldman, W. H.: Neoplasms of Domesticated Animals. W. B. Saunders Co., Philadelphia, 1932.

Using semen dilution from 1:16 to 1:4, the rate of conceptions from first and second inseminations varied between 48.1 to 56.3 per cent in six groups of cows numbering from 289 to 589 head. The lowest concentration (1:16) gave the highest percentage of conceptions. Dilutions of 1:50 gave as satisfactory results as 1:16 in another group of experiments.—*Quoted from J. Dai. Sci. by Canad. J. Vet. Med. 10, (Apr. 1946): 112.*

A Million Surgical Operations

Biological Abstracts, Section E, Animal Sciences (March, 1946: 645), contains an abridgement of an article from *Queensland Agricultural Journal* entitled "Organizing for the Mules Operation," by G. R. Mole, who reports the use of the operation in over 1,000,000 sheep. The Mules operation, described in an illustrated article in the May, 1944, issue of the JOURNAL (pp. 279-280), is performed on a large scale in South Australia to prevent blowfly-larva infestation, or so-called "crutch strike." The object is to smooth up the wrinkle on the lateral sides of the vulva and to widen the hairless area by shearing out an oblong island of skin in such a way that the medial edges of the two wounds are an inch apart across the vulva.

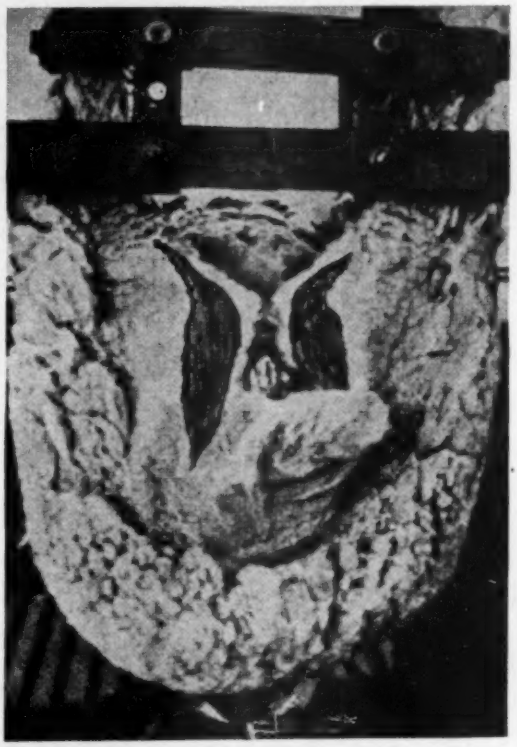

Fig. 1—Mules operation, showing the two islands of the skin resected on each side of the vulva-anal region to obliterate nesting places for blowfly larvae. The illustration is oriented bottom side up (operating position) in the original picture.

The operation is performed on lambs 5 to 10 months old and at a time when blowflies are not active. Two men, says the abstract, can perform from 900 to 1,000 operations a day. Interest in the operation is revived because the large number of lambs treated removes it from the experimental stage.

Blood-letting, every day operation of other days which went completely to the limbo before the turn of the century, comes to life once more to remove large volumes of vitiated blood (as much as 75%) and to replace it with normal blood. A new method of treating grave malaria of man and of azoturia of horses is the blood-letting operation.

CLINICAL DATA

Pulmonary Actinomycosis in Swine

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Reno, Nevada

ACTINOMYCOSIS has been described as a specific disease of swine by many European, and some American, investigators. The presence of gram-positive staining, club-bearing rosettes in the pus, or in the granulomatous lesions, has been generally accepted as *prima facie* evidence of invasion by Actinomyces of the Wolf-Israel type.

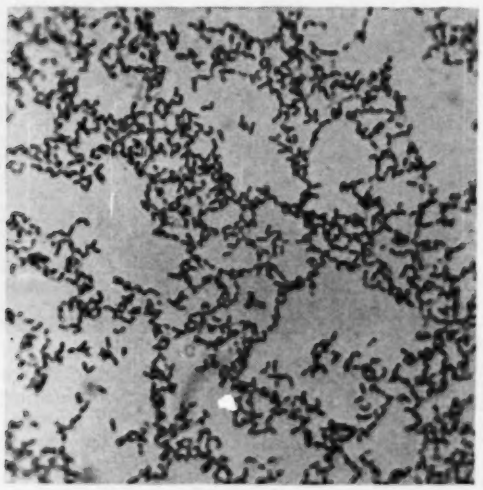

Fig. 1—Diploid forms predominating in veal liver agar slant culture incubated four days under CO_2. Gram stain x 950.

Actinomycosis-like lesions in the udder and visceral organs of swine have been reported by meat inspectors and clinicians for many years. Magnusson[1], of Sweden, conducted an extensive investigation of actinomycosis in cattle and swine and concluded that actinomycotic-like lesions in the udder of swine may be associated with either *Actinomyces israeli* or *Staphylococcus pyogenes* infection. He found three types of diphtheroid microörganisms in the actinomycotic lesions of cattle and swine which he designated *Streptothrix israeli*, types A, B, and C. Type A occurred in the udders and lungs of swine, and types B and C occurred in cattle. Because of difficulties encountered in determining the physiologic and biochemic features, he differentiated the three types mainly by their cultural and serologic features. Creech[2] reported the presence of gram-positive, club-bearing rosettes in nodular lesions in the spleens of swine, which closely resembled those observed in actinomycosis of cattle. He recovered what he believed to be *Actinomyces bovis* from only one of the splenic lesions in swine and did not describe that culture in detail.

Shahan and Davis[3], in a more recent paper, reported 1 case of pulmonary actinomycosis in swine which was confirmed by histologic examination. In spite of the many reports intimating that *A. bovis*, or a variant thereof, occurs in the actinomycotic lesions of swine, search of many papers has not revealed any detailed cultural description of the swine type other than that given by Magnusson.

No mention of bone involvement has been found in the reports on actinomycosis in swine, all of the lesions being confined to the soft tissues such as the udder, lungs, spleen, or other visceral organs. In many respects, the disease in swine tends to follow a pattern of tissue localization somewhat analogous to actinomycosis in man, wherein pulmonary, adenocervical, or skin lesions may appear.

Recently, what may be an endemic occurrence of pulmonary and visceral actinomycosis among swine came to our attention. Dr. W. K. Shidler, in charge of meat inspection for the United States Depart-

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ment of Agriculture, submitted part of the lung of a hog which had been slaughtered at a local plant, with the history that 2 hogs from a certain small lot showed extensive purulogranulomatous lesions in the lungs with pleuritic adhesions and similar lesions in the spleens and kidneys. He recalled that about one year previously, 2 or more hogs from the same ranch in the Sacramento Valley of California were condemned because of similar generalized lesions.

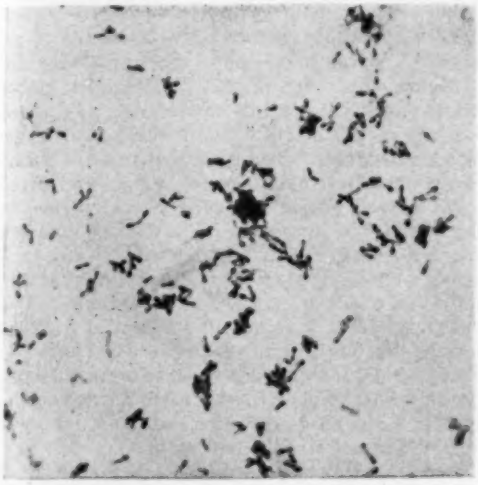

Fig. 2—Diphtheroid, club, and dumb-bell forms in deep culture; serumized veal liver broth. Gram stain x 950.

The specimen was submitted within an hour after removal from the carcass. It was covered by a fibropurulent exudate, and many single and confluent, gray, nodular lesions were present on the surface as well as throughout the lung structure. They varied from 2 to 10 mm. in diameter. The larger lesions contained gray, nongranular, mucoid pus. Microscopic examination of the pus, mixed with 5 per cent potassium hydroxide under a cover glass, revealed many club-bearing rosettes. Stained pus films revealed many gram-positive diphtheroids, diploids, curved, slender rods, and a few club forms. The latter were alcohol fast but not acidfast. Branched filaments were not observed in the pus smears.

Aërobic and anaërobic cultures were made from the suppurating lesions. Cultural growth appeared after forty-eight hours of incubation, but only in serumized cultures providing microaërophilic or anaërobic conditions.

Veal liver serum agar plates inoculated with pus from the lung lesions and incubated under about 10 per cent CO_2, as well as deep agar-shake cultures, indicated the presence of a single microbial species by reason of uniformity in size, structure, and appearance of the colonies. Even though a pure culture was presumably obtained direct from the lung lesions, this was verified by the usual methods.

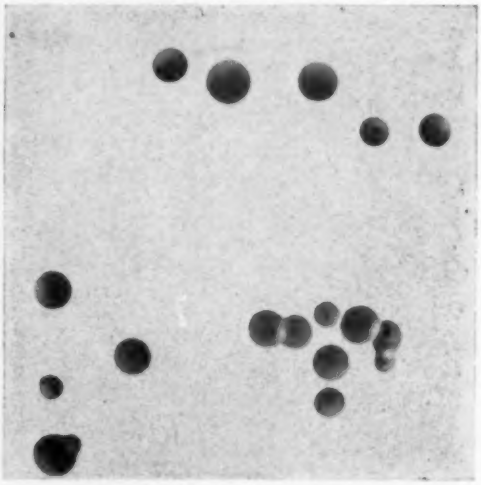

Fig. 3—Surface colonies on serum dextrose agar plate incubated four days under CO_2 x 20.

MATERIALS AND METHODS

Morphology and Staining.—The swine culture duplicates many of the pleomorphic features peculiar to *A. bovis* and is strongly gram-positive. Diploid and diphtheroid forms predominate in surface colonies and in semisolid serum-agar, stab cultures, whereas diphtheroids, small, slender rods, and club forms appear in fluid mediums providing microaërophilic or anaërobic conditions (fig. 1 and 2). Club and dumb-bell forms develop in serumized fluid mediums after three to five days' incubation. The diploid forms appear to be sluggishly motile during the early stage of cultural growth.

Cultural Features.—Growth is most luxuriant at 37 C. under microaërophilic or anaërobic conditions, or in the presence of about 10 per cent CO_2 but does not appear until the thirty-sixth to forty-eighth hour of incubation. Delayed and scant growth occurs under similar conditions at 25 C. Tolerance for atmospheric oxygen has increased slightly after one year on suitable mediums. A scant surface growth appears after ten days' incubation if the culture tubes are sealed.

Serumized mediums afford the most luxuriant growth, but excellent growth also occurs in deep columns of glucose veal liver broth containing 0.05 per cent agar, and in cooked meat

medium with sodium thioglycollate. Rather frequent transfer is required, as this culture dies out within one month when kept at incubator or room temperature. Cultures will remain viable for two months or more in buffered, cooked meat medium when stored at 5 C.

Cultural growth in fluid mediums varied somewhat according to the viscosity. In cooked meat medium with sodium thioglycollate, a dense, fluffy, and moderately granular growth

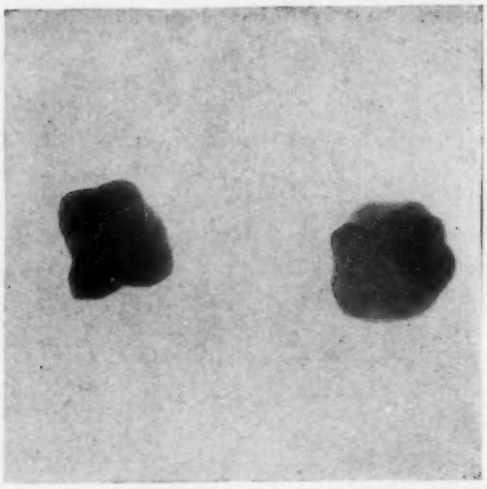

Fig. 4—Deep agar colonies. x 20.

developed in the lower half of the column. The meat particles were not changed. In veal liver broth containing 0.05 per cent agar and 0.2 per cent glucose, 6 to 7 cm. in depth, feathery, or puff ball, masses of organisms float in the column of mediums, but there is no surface growth.

Surface colonies developed on glucose serum agar after forty-eight hours' incubation in the presence of CO_2. They first appeared as opalescent, pulvinate, homogeneous forms with smooth edges 0.3 to 0.7 mm. in diameter. Small rosette-like crowns develop on the surface of each colony in four to five days, giving them an umbonate appearance, but after the swine culture had been kept on laboratory mediums for one year, this feature disappeared (fig. 3). Myceloid or filamentous colonies were observed on agar-plate cultures. Colonies on blood agar were gray, smooth, mucoid, and nonhemolytic.

Colonies in deep, agar-shake cultures first appeared as biconvex discs in about forty-eight hours, later developing into yellowish, slightly furry, multilobulate forms up to 1 mm. in diameter (fig. 4). In stab cultures in semisolid agar, a nodular, yellow growth occurs along the needle track up to 2 or 3 mm. from the surface. Fragmentation of the agar column does not occur in stab or shake cultures.

On potato slants sealed with a stopper or incubated under CO_2, a scant, chalky white growth develops in ten days. Potato slants were the only cultures in which a myceloid-like growth was observed with the presence of bulbous filaments, clubbed forms, and segmentation of filaments into bacillary or coccoid forms (fig. 5). None of the cultures were fluorescent under ultraviolet light.

As no growth occurred on Edwards' medium, it was presumably suppressed by the crystal violet. Gray, smooth colonies developed on Loeffler's medium without any evidence of proteolysis. After over one year on laboratory mediums, this culture has retained its smooth colony contour and has not shown any indication of variation into the mycelial, or rough, type as occurred with some cultures of human origin described by Rosebury, Epps, and Clark[4].

Physiologic Features.—The swine culture was nonproteolytic on any of the mediums customarily used for this purpose. Purple milk under vaspar seal was slightly acidulated in ten days but otherwise unchanged after three weeks. Gelatin was not liquefied and hydrogen sulfide not produced.[3] Methyl red, Voges-Proskauer, and indole tests were negative. Soluble starch was not hydrolyzed. Nitrates were rapidly reduced to nitrites, but further reduction of the nitrite did not occur.

Fermentation Reactions.—Substances acidulated without gas production: glucose, levulose, galactose, maltose, lactose, sucrose, trehalose, raffinose, dextrin, inulin, salicin, glycerol, and inositol. Acidulation of inulin, inositol, raffinose, and salicin did not appear until the seventh and, of glycerol, not until the fourteenth day. Substances not fermented were: arabinose, mannite, dulcitol, xylose, rhamnose, and sorbitol. Reduction of fermentable substances was determined by withdrawing a small amount from the tube with a sterile pipette and testing with bromthymol blue on a porcelain plate.

PATHOGENICITY

The swine culture was not pathogenic for mice upon single intranasal or intrathoracic inoculation. No visible lesions were detected at autopsy, after sixty days.

HISTOPATHOLOGY

Sections of the hog lung stained with hematoxylin-eosin, Gram Weigert, and Ziehl-Nielsen methods revealed the usual necrotic, granulomatous process characteristic of the Wolf-Israel type of actinomycosis, heretofore described in other species of mammals. Most of the functional lung tissue had been replaced by the morbid, granulomatous process. The necrotic nodular masses were well encapsulated, and many petalated, club-bearing rosettes were

embedded in a matrix of lymphocytes and giant cells (fig. 6).

The petalated clubs were not acidfast but stained well with eosin. The central part of the rosettes consisted of a dense mass of gram-positive, diploid and diphtheroid organisms. Several asteroid aggregations composed of loosely arranged, gram-positive, unsheathed filaments were

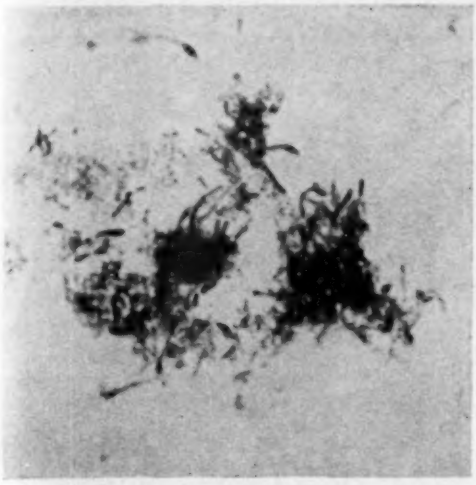

Fig. 5—Club forms with attached filaments segmenting into rods and diploids. Sealed potato slant culture thirty days. Gram stain x 950.

observed and presumed to be the initial stage of rosette formation. Some filaments in these aggregates appeared to be branched (fig. 7).

A notable feature was the intimate proximity of the necrotic lesions to bronchial structures. Several developing rosettes fringed with unsheathed gram-positive filaments were found in the respiratory bronchioles. Proximity of the lung lesions to bronchial structures and the presence of developing rosettes in the respiratory bronchioles suggested that oxygen-carbon dioxide relationships were very favorable for extension of the parasitic process. It also suggested, but did not necessarily establish, inhalation infection (fig. 8).

Although the swine culture of actinomycosis rather closely resembled several of bovine origin, formerly described by the writer, certain differences were apparent. The absence of branching filaments in pus smears and cultures, greater tolerance for atmospheric oxygen, certain differences in fermentation reactions, and tissue localization may set it apart from the anaërobic or limited microaërophilic cultures of bovine origin heretofore examined. The swine culture reduced raffinose, inulin, and glycerol which were not attacked by the bovine strains formerly described as type 1 by the writer. It appeared to conform to the specifications proposed for the genus Actinomyces by Waksman and Henrici[5].

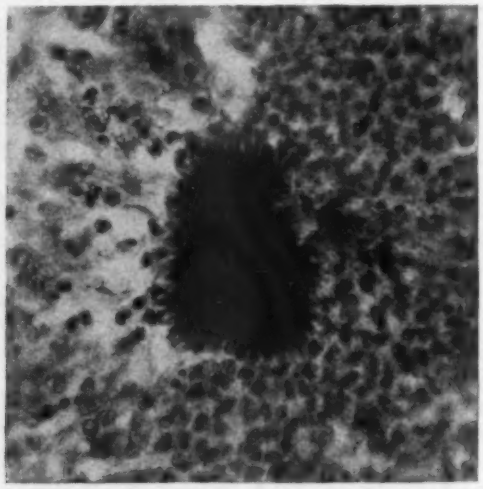

Fig. 6—Club-bearing rosettes in lung lesion of hog. Hematoxylin-eosin. x 450.

DISCUSSION

There is a conspicuous lack of agreement, among eminent authorities and in publications, regarding the microbiologic features of pathogenic Actinomyces associated with morbid processes. In some instances, the organisms recovered are so incompletely described as to cast doubt upon their real identity.

The failure to reproduce experimentally the morbid process seen clinically by parenteral inoculation, except in a few instances, places the etiologic rôle of Actinomyces in the speculative category supported mainly by clinical and pathologic evidence. The various morphologic forms peculiar to the genus Actinomyces are not always readily reproduced *in vitro*. This is particularly true of the pathogenic species. The variable behavior of cultures from similar morbid processes in the same species, in respect to microbiologic features, has been reported by Holm[6], Magnusson[1], and Vawter[7].

Divergence in morphologic, cultural, and physiologic characters may be attributed

not only to environmental and cultural conditions, but also to microbic variation as suggested by Rosebury, *et al*[4]. It is quite possible that the inconsistent behavior in cultural and biochemic features reported by Magnusson may be attributed to microbic variation which was not recognized at that time. The writer obtained a culture from Dr. Magnusson which consisted of two distinct tinctorial types.

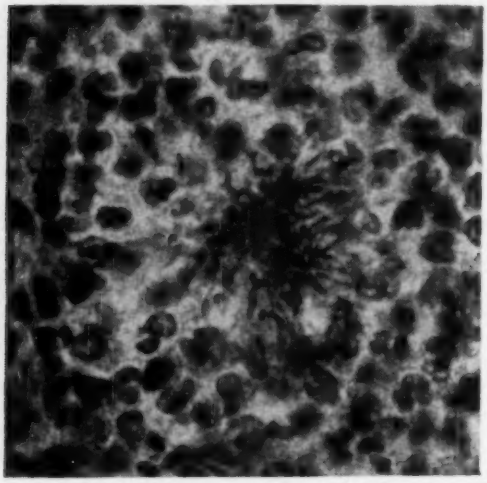

Fig. 7—Developing rosette composed of unsheathed filaments, and diphtheroids. Gram-Weigert x 950.

In view of the erratic behavior cited under cultural conditions, it is questionable if any satisfactory system of classification or identification can be devised based on characters which may readily become divergent through environmental influences. Furthermore, there are some distinct physiologic differences, in the few cultures of *A. bovis* examined, from the dry region of the Sierra Nevada in the western United States, when compared to those obtained from the vicinity of Buffalo and Ithaca, New York. Bone actinomycosis of cattle is rather rare in the western region. The antigenic and serologic relationships of the pathogenic Actinomyces have not been extensively investigated and warrant more inquiry.

In some instances[8, 9], *A. bovis* is described as being mildly proteolytic, peptonizing milk, and liquefying gelatin. In view of our limited knowledge regarding the pathogenic Actinomyces, the existence of proteolytic types among them cannot be denied; however, some nonpathogenic, aërobic species of soil Actinomyces are actively proteolytic. None of the 15 cultures recovered from bone actinomycosis in cattle, previously described by the writer, nor the two examined in the interim, nor the swine culture presently described have shown any evidence of proteolytic action in laboratory mediums customarily used for this purpose.

As *Corynebacterium pyogenes* has been recovered concomitantly with *A. bovis* from

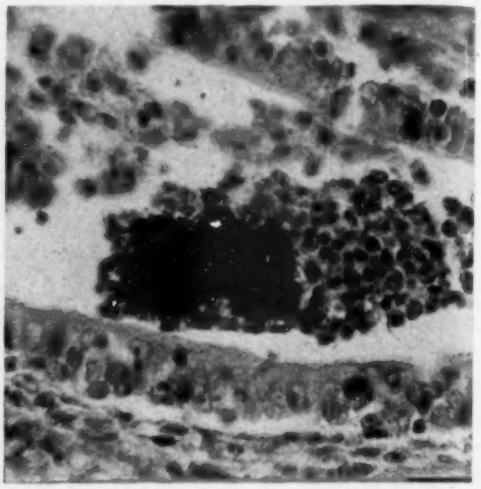

Fig. 8—Rosette developing in respiratory bronchiole fringed with unsheathed Gram-positive filaments. Gram-Weigert x 950.

actinomycotic-like lesions, including bone actinomycosis of cattle by Magnusson, Hülphers[10], Gunst[11], and the writer, it is not impossible that some of the proteolytic features attributed to pathogenic Actinomyces from animal sources may be due to an unsuspected mixture with *C. pyogenes*. Most cultures of *C. pyogenes* from suppurative lesions examined by the writer actually prefer microaërophilic conditions and require serum or blood when first recovered, but they gradually adjust themselves to make a scanty growth under aërobic conditions and eventually grow quite well in glucose, liver infusion mediums in the absence of blood or serum.

As the diploid and diphtheroid forms of *A. bovis* may closely resemble *C. pyogenes* in respect to morphology and staining under certain cultural conditions, *C. pyogenes* might persist indefinitely as a contaminant unless appropriate procedures are instituted to exclude it.

Furthermore, club-bearing rosettes may be found in the pus in some instances of

C. pyogenes infection not regarded to be actinomycosis clinically. We have repeatedly observed asteroid, club-bearing rosettes with slender, lanceolate club elements in the pus from lung abscesses in lambs and the subcutaneous facial abscesses in Rambouillet bucks from which *C. pyogenes* was recovered in pure culture. The strains of *C. pyogenes* recovered from bone actinomycosis of cattle and from pulmonary and facial abscesses of sheep generally conform to Type 1 Corynebacterium, as described by Merchant[12], in respect to proteolytic and other features.

The present chaos regarding the microbiologic features of the pathogenic Actinomyces will, no doubt, continue until someone examines a large number of strains from animal and human sources and determines their various microbic relationships under uniform conditions.

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The hope of curing tuberculosis with streptomycin is dwindling, according to reports to the Society of Bacteriologists mentioned in *Science Digest* for June.

Foot-and-Mouth Disease Threatens

On May 28, 1946, effective June 5, 1946, Secretary of Agriculture Clinton C. Anderson stiffened the regulations governing the entrance of animals from Mexico on account of the danger of bringing foot-and-mouth disease into this country by Brazilian cattle which find their way into Texas in violation of the convention (treaty) between the United States and the Republic of Mexico. Notwithstanding the high incidence of foot-and-mouth disease, a shipment of 120 Brahman bulls in 1945 and another shipment of 327 in April, 1946, were landed from Brazil on Sacrificios Island in the harbor of Vera Cruz (*The Cattleman*, June, 1946) and were released to Mexican herds without adequate quarantine. In view of the alleged violation and the annual movement of some 500,000 Mexican cattle into this country, leading livestock producers of southern Texas openly declare that an outbreak among their herds seems inevitable. Anyhow, the situation was regarded critical enough to write more rigid amendments into the regulations governing the admission of cattle from Mexico. The amendments designate (1) ports of entry, (2) permits for ruminants and swine, (3) Mexican animals originating in foreign countries, (4) period of quarantine, (5) facilities for quarantine, (6) inspections and diagnostic tests.

Says the article *(loc. cit)* "The gravity of the present situation cannot be minimized. Prompt and vigorous action should be taken at once to stop these importations. Sanitary officials should be on the alert."

Dogs inoculated repeatedly with virulent strains of *Brucella suis* (*Am. J. Path. 21*, 1945: 753-777) did not develop clinical disease but were found to harbor virulent Brucella in the reticulo-endothelial tissues as long as seven months after the injections were discontinued.

The vaccination of cattle and goats against Johne's disease by means of subcutaneous injections of the living specific organism, preconized by Vallée and Rinjard several years ago, was found to be a safe procedure or at least one that merits a trial in badly infected herds not responsive to the usual measures.

Trichomonas and Hemoproteus Infections and the Experimental Use of DDT in the Control of Ectoparasites in a Flock of Signal Corps Pigeons in the Territory of Hawaii

LT. COLONEL ROBERT H. YAGER, V.C., U.S. ARMY, and CAPTAIN CHESTER A. GLEISER, V.C., U.S. ARMY

TRICHOMONIASIS OF PIGEONS, usually in squabs, is caused by the trichomonad which was first described by Rivolta in 1878[3, 6]. This protozoan parasite has, until recently, been known as *Trichomonas columbae*[4] and

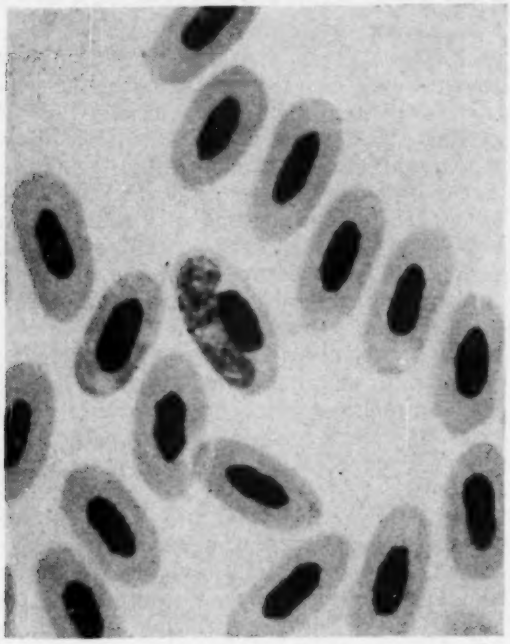

Fig. 1—Female gametocyte of Hemoproteus columbae. (1360x)

is now known as *Trichomonas gallinae*[4]. It has been reported from South Africa, Hungary, the West Indies, Holland, Japan, and from the United States by Cauthen[2] and Waller[5]. Cauthen reported the occurrence of this trichomonad in birds other than the domestic pigeon[1, 2]. He observed the infection in a large colony of domestic pigeons, ring doves, and mourning doves situated on Long Island, N. Y. Trichomonads were found in the crop contents, and the ring dove and the mourning dove were added as hosts for *T. gallinae*.

Workers have reported the occurrence of *T. gallinae* in various organs of the pigeons, and have described pathologic conditions associated with this Protozoa. Its presence has been described in the mouth, crop, intestine, liver, pancreas, lung, peritoneum, heart, pericardium, blood vessels, blood, air sacs, and pleura[2]. Cauthen failed to find the parasite in the last four organs mentioned[2]. It occurs frequently in the crop and mouth of older birds where it seems to be quite harmless[1, 2, 3, 6]. Cauthen found the greatest number of trichomonad lesions in the livers of dead pigeons.

The lesion itself consists of a necrotic, caseous area surrounded by granulation tissue. Cauthen was able to produce such lesions by intramuscular experimental inoculation into the breasts of squabs.

Hemoproteus columbae, the causative agent of the so-called "pigeon malaria," is a member of a group of blood-inhabiting Protozoa known as the Hemosporidia, which are closely related to the Coccidium[3, 7].

Two families comprise the suborder Hemosporidia, the Plasmodidae, and the Hemoproteidae. Members of the former undergo the entire vertebrate cycle of development in the circulating erythrocytes[7]. Thus, schizonts and gametocytes can be observed in the circulating blood. In the Hemoproteidae, only the gametocytes occur in the circulating blood, since the schizogony cycle occurs in the endothelial cells of the capillaries[7].

The fertilization of the female gametocyte does not take place in the vertebrate host, in the hemosporidia, but in the stomach of an invertebrate which has sucked up the gametocytes circulating in the erythrocytes of the vertebrate. The zygote resulting from the fertilization is motile and penetrates the wall of the stomach to form oöcysts in the tissues. The oöcysts increase

The parasitologic identifications in this study were made by Major E. C. Nelson, SnC; the entomologic data by Major J. E. Webb, Jr., SnC, who also directed the experiment in the ectoparasite control. The photomicrographs were prepared by the Army Institute of Pathology.

in size and numbers. The resulting motile sporozoites migrate to the mouth parts of the invertebrate, and are inoculated into a vertebrate at the next blood meal. The growth of the sporozoites into schizonts then occurs in the endothelial cells of the blood capillaries. After several repetitions of schizogony, certain merozoites are produced which enter the erythrocytes, and there produce gametocytes[3, 7].

The invertebrate host incriminated in the transmission of *H. columbae* of pigeons is a blood-sucking member of the fly family, *Pseudolynchia canariensis*, the pigeon fly[7].

LABORATORY STUDIES

Two homing pigeons were submitted by the veterinarian of a Signal Pigeon Combat Platoon to the veterinary branch of the 18th Medical General Laboratory for autopsies and indicated laboratory studies.

Pathology.—The clinical history of pigeon 13165 revealed that about three weeks previously it had been submitted for treatment because it was egg bound. The bird was then in poor flesh, and the appetite was reported poor. Several days later, an examination revealed the presence of a diphtheritic membrane and a caseous type of exudate in the pharynx. The bird was sacrificed and an autopsy performed.

An external examination of the bird revealed a heavy infestation of lice and mites. A pigeon fly was also found.

The autopsy revealed the presence of the diphtheritic membrane and caseous exudate mentioned above. These lesions were confined to the pharynx and the uppermost portion of the esophagus. A heavy tapeworm infestation was discovered in the intestinal tract. The intestinal mucosa was highly congested.

Fresh smears of the exudate removed from the pharynx revealed numerous, highly motile trichomonads. Stained smears revealed the presence of the gametocytes of the Hemoproteus in the nucleated erythrocytes. Cultures, aërobic and anaërobic, taken at the autopsy failed to reveal any unusual organisms.

The clinical history of pigeon 2333 was marked by inappetence, emaciation, and a slight coryza. The lesions of the pharynx were similar to those of bird 13165.

The autopsy findings were exactly those of the first bird, with one exception. Both lungs in this bird were conspicuous by the presence of multiple necrotic lesions and areas of hemorrhage.

Numerous trichomonads were again discovered in freshly prepared smears of the pharyngeal exudate. Stained smears also disclosed the presence of the gametocytes of the Hemoproteus. Aërobic and anaërobic cultures taken at the autopsy did not reveal any significant microörganisms.

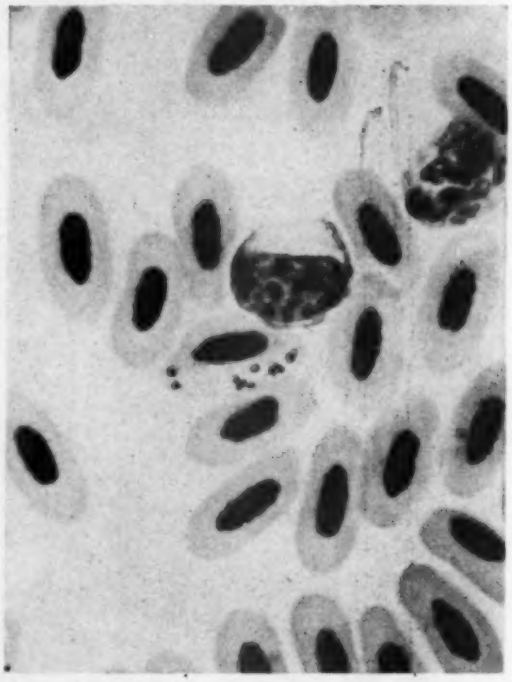

Fig. 2—Male gametocyte of Hemoproteus columbae. (1360x)

Parasitology.—The tapeworms removed from the intestinal tracts of these 2 birds were identified by the parasitologist as members of the family Davaineidae, genus Raillietina.

Hematology.—(*See* fig. 1 and 2). Blood smears were prepared from 6 pigeons in the flock subsequent to the discovery of the gametocytes of the Hemoproteus in the stained smears prepared with the pharyngeal exudate of the 2 birds described above. The smears were stained with Giemsa's stain and examined for the presence of the gametocytes of the Hemoproteus. Gametocytes were found in all smears examined. No heavy infestations were found, the highest yielding 2 gametocytes per microscopic field. Figure 1 illustrates the female gametocyte, and figure 2 the male gametocyte. The birds examined originated from flocks

in New Jersey, California, and the Territory of Hawaii.

Histopathology.—(See fig. 3). Microscopic sections of the lungs showed most of the alveoli to be collapsed. The parenchyma was infiltrated with inflammatory cells and contained foci of hemorrhage. Numerous foci of a granulomatous type of inflammation were present. They were characterized by central granular, acellular, acidophilic material surrounded by epithelioid cells and giant cells of the Langhans' type. Acidfast stains did not disclose the presence of acidfast organisms within the central areas; however, clumps of short bacillary forms which did not take the acidfast stain were observed. Their significance was questionable.

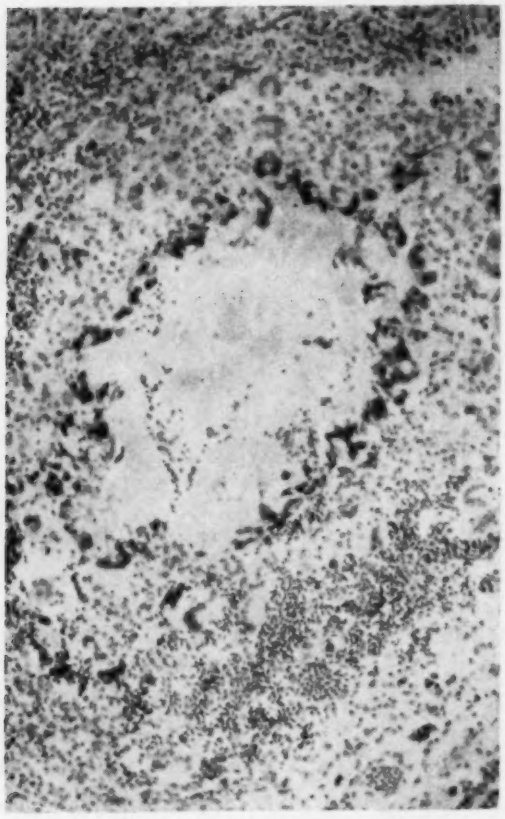

Fig. 3—Lung lesion in pigeon 2333 (160x) illustrating pulmonary trichomoniasis.

Entomology.—The entomologist of the laboratory identified the following ectoparasites as causing medium to heavy infestations:

1) *Columbicola columbae* (Linné), the feather louse.

2) *Pseudolynchia canariensis*, the pigeon fly, accused of transmitting pigeon malaria, *Hemoproteus columbae.*

3) *Falculifer rostratus*, a species of feather mite.

An experiment was set up under the direction of the entomologist to determine the efficacy of DDT in the control of these ectoparasites.

One loft of 26 pigeons was treated with 10 per cent DDT in talc, applied at the rate of about 3 Gm. per bird. The powder was dusted on the entire undersurface of the wings, the underside of the tail feathers, on the breast, back, and around the base of the tail.

A second loft of 26 birds was treated with an approximately 0.75 per cent sodium fluoride dip. Each bird was in the dip for approximately thirty to forty-five seconds, during which time the feathers were ruffled. The head was held under the dip for a moment.

A third loft of 30 pigeons was observed as a control for the test. All three of the lofts were heavily infested with lice and mites, and lightly infested with the pigeon fly.

RESULTS

A complete kill of lice and flies was obtained with DDT within twenty-four hours. A slight control of mites by the DDT was observed after twenty-four hours, but a very marked reduction was effected after three days. No toxic effects were observed. The sodium fluoride dip treatment yielded an approximate 50 per cent kill of lice after twenty-four hours, and almost a complete kill after five days. The control of mites by the fluoride was equivalent to that obtained by the DDT after five days. The infestation of pigeon flies in the flock treated with sodium fluoride was too light to determine what control was effected.

DISCUSSION

Trichomoniasis is generally considered to be a disease of squabs and young pigeons, and is known to occur in the mouth and crop of older birds as a nonpathogen.

The pathogenic rôle of the trichomonads in these two instances may be attributed to the general debility of the birds resulting from the serious parasitism, internal and external. The pathogenicity was low grade in 1 bird, since the lesions were confined to the mouth. If the trichomonads were re-

sponsible for the lesions in the lungs of the other bird, one had to assume that the process was not a recent one. Trichomonads in these lungs could not be demonstrated.

The Hemoproteus infection in this flock did not present a serious problem. Due to the light degree of infection present, and the self-limiting nature of the life cycle of this protozoan parasite, the control and eradication of the pigeon fly should completely check this infection.

DDT, in a powder base, proved highly effective in killing lice and flies in a loft of 26 pigeons. It was, however, much less efficacious in controlling the mites in the same loft. The DDT dusting and sodium fluoride dipping were found to be about equally effective in the control of lice and mites on the birds. The DDT, however, did effect a more rapid control of the lice.

CONCLUSIONS

1) *Hemoproteus columbae,* the hematogenous protozoan of the so-called "pigeon malaria" is present in the Territory of Hawaii, but has not been previously reported.

2) DDT, 10 per cent in talc, on one trial, proved very effective in the control of the feather louse, *Columbicola columbae,* and the pigeon fly, *Pseudolynchia canariensis,* but only moderately effective in the control of the feather mite, *Falculifer rostratus,* in a loft of 26 pigeons. No signs of toxicity were observed.

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Thiouracil

Thiouracil (sulfur-urea), which is often mentioned and widely discussed in modern medical literature, is employed to depress the secretory activity of the thyroid in the event of excessive metabolic levels (thyrotoxicosis), a condition not commonly identified in clinical veterinary medicine. Chemically, it is urea with its oxygen replaced by sulfur. Thiouracil-treated animals are used in genetics as its depressive action on metabolism aids in making interpretations.

Newcastle Disease and Fowl Plague

Once known to American veterinarians only as an exotic disease that was occasionally mentioned in the literature, Newcastle disease has recently been mentioned in the headlines.

The *American Journal of Veterinary Research* (July, 1946) carries a series of manuscripts which report the results of a research project conducted during the war under the direction of a War Department Commission consisting of: Brigadier General R. A. Kelser, U. S. Army; Dr. R. E. Dyer, U. S. Public Health Service; Dr. H. W. Schoening, Pathological Division, Bureau of Animal Industry, U. S. Department of Agriculture; Dr. E. B. Fred, University of Wisconsin.

The work was performed and the reports submitted by a group of workers consisting of: Dr. C. A. Brandly, professor of Veterinary Medicine and Agricultural Bacteriology, University of Wisconsin, Madison; Dr. H. E. Moses, associate pathologist, Purdue University, Lafayette, Ind.; Dr. E. Elizabeth Jones, associate professor, Wellesley College, Wellesley, Mass.; Dr. E. L. Jungherr, animal pathologist, Storrs Agricultural Experiment Station, Storrs, Conn.; and Dr. E. E. Tyzzer, professor emeritus, Department of Comparative Pathology and Tropical Medicine, Harvard Medical School. Studies by this group were conducted at the Harvard Medical School, Boston, Mass., in a large five-unit building set aside for their exclusive use as a safeguard against the escape of the virus.

A brief summary of this work appeared in the June JOURNAL (p. 369), but the manuscripts in the *Research Journal* cover 100 pages and present details on the epizoötiology, the isolation and identification of virus, the transmission of antiviral activity in eggs, the immunization of chickens, and the comparative pathology of fowl plague and Newcastle disease.

An article by Dr. J. R. Beach, Berkeley, Calif., also appears in the June JOURNAL

(p. 372), and it describes the condition known as pneumoencephalitis which is now recognized as being identical with Newcastle disease. This article describes in detail the symptoms, lesions, and control measures which have characterized the American appearance of the disease.

A conference on Newcastle disease was held in Washington, D.C., at the invitation of Dr. B. T. Simms, chief of the Bureau of Animal Industry, on May 2 and 3, 1946. The proceedings of this conference have been mimeographed and sent to poultry pathologists and livestock sanitary officials in the several states. The report consists of 139 typewritten pages and lists the history, lesions, present status of the disease, and steps that have been, are being, or will be taken to check the spread of this condition which is now known to be present in more than 20 states.

Improved Anthrax Vaccine

Delpey and Kaweh, of the State Serum and Vaccine Institute of Iran *(Bull. Acad. Vét. France,* April, 1946), describe experiences with an anthrax spore vaccine of their own making that gave better results than the available vaccine of the production laboratories. Anthrax vaccination against sudden outbreaks is capable of causing embarrassment to practitioners through deaths, failure of immunity, spoilage of the vaccine exposed to hot weather, unconfirmed diagnoses, shortage of veterinarians, and other human obstacles. What's more, intradermal vaccination is impracticable in untrained hands, and among nomadic, intractable herds, the two-dose treatment of Pasteur is too slow in conferring immunity and too time-consuming. The need is for a single-dose vaccine of low virulence that can be given without error in dosage or technique, that confers immunity without delay in infected places, that is easy to prepare, that can be preserved without special precautions, and lastly, one that can be employed in various species by simply regulating dosage.

The usual vaccines had been tried: the two-dose type, saponized vaccine of the carbozoo class, and the spore vaccine of Eichhorn and Theiler. All of these were discarded in 1936, since it had been discovered that Iranian cultures can be transformed into a spore vaccine that is free of danger without the addition of saponin, if specially prepared and suspended in glycerinated saline solution.

Preparation.—The second Pasteur vaccine when passed several times through rabbits and guinea pigs, loses its virulence for sheep in large doses, completely.

Preparation requires seventy days. After the activity of the culture is verified in rabbits and guinea pigs, about 100 Roux boxes are inoculated to grow 2.5 to 3 million spores. When sporulation terminates, the spores are raked off, placed in 50 per cent saline-glycerin, and then diluted in 6 liters of physiologic salt solution to constitute the parent product, which is then incubated for three weeks at a temperature that will kill mycelian elements but not destroy the spores.

Some 39 million doses of this vaccine were used between 1931 and 1944 with the result that anthrax was practically eradicated by 1939. The war having broken down the veterinary service, more than a million head died of anthrax in 1944 and 1945.

Though the method is thought to be of extreme importance where vaccination has to be practiced extensively to suppress anthrax, the Academy regrets that a full report of this work cannot be published at this time.

Velsicol, 1068

An insecticide ten times more toxic to grasshoppers than DDT, three times more lethal to cockroaches and flies, twice as poisonous to potato bug larvae and pea aphids, and equal to DDT against malaria-bearing mosquitoes is the rating given by Drs. C. W. Kearns and Lester Ingle, entomologists at the University of Illinois, to a new chlorinated hydrocarbon they have named Velsicol. Its formula is $C_{10}H_6Cl_6$, hence, the 1068 attached to its proprietary name. The new compound is about equal to DDT in its effects on warm-blooded animals. Not having the lasting properties of DDT is claimed as an advantage in the treatment of edible plants.

Fits and nervous disorders in dogs may be avoided with a diet of meat supplemented with vitamin A.—*Science Digest.*

A Case of Histoplasmosis in a Dog

H. R. SEIBOLD, V.M.D.
Washington, D. C.

HISTOPLASMOSIS, or reticuloendothelial cytomycosis, is an infectious disease caused by the fungus *Histoplasma capsulatum*. Descriptions of the disease in man characterize it as a generalized infection involving the reticuloendothelial system. Clinical manifestations are emaciation, leucopenia,

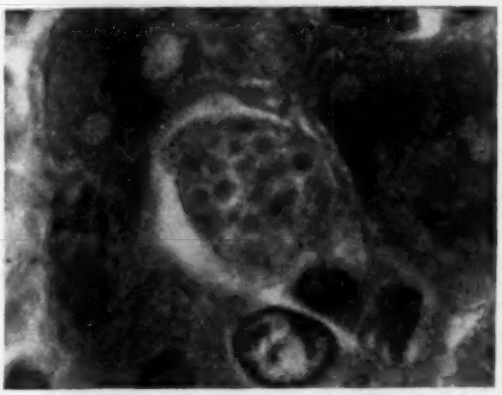

Fig. 1—Organisms within a large mononuclear cell in a hepatic sinusoid. x 1600.

anemia, and irregular pyrexia. Enlargements of the spleen, liver, and lymph nodes are frequent, as are ulcerations in the naso-oral-pharyngeal cavities and the intestine.

Numerous cases occurring in man have been reported since the disease was first described by Darling, in 1906, but only a few cases of natural histoplasmosis in dogs have been reported. In 1939, De Monbreun[1] first described a natural case of the disease in a dog, establishing the diagnosis by histologic studies, cultivation of the organism, and experimental transmission of the disease. More recently, 4 additional cases have been reported, 1 each by Thuringer[2] and Callahan[3], and 2 by Birge and Riser[4]. The object of this paper is to report another case of natural histoplasmosis in a dog, diagnosed by histologic examination. Tissue specimens from the dog, the case history, and the postmortem findings were obtained from Dr. M. Parsons of Arlington, Va.

The author is from the Pathological Division, Bureau of Animal Industry, Agricultural Research Administration, U. S. Department of Agriculture.

HISTORY

The dog was a male Pit Bull Terrier about 2 1/2 years old. For a period of two months before death, the animal suffered a gradual loss of weight and condition. It was estimated that the dog was about 20 lb. under weight at the time of death. During the period of illness, the appetite was unaffected but the stools were loose. The temperature was variable, being normal on some days and slightly elevated on others. Shortly before death, the temperature became subnormal. Information about the dog's surroundings and contacts was not available.

Clinical laboratory examination failed to show evidence of intestinal parasites or

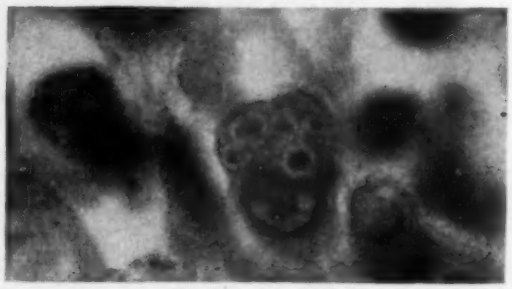

Fig. 2—Organisms within large mononuclear phagocytes infiltrating the pericapsular connective tissue of a lymph node, x 1600.

heart worms, *Dirofilaria immitis*. The dog reacted negatively to intradermic tuberculin tests made on two occasions.

POSTMORTEM EXAMINATION

The carcass was emaciated. The liver was considerably enlarged and lighter in color than normal, on account of an indistinct mottling with numerous small, greyish areas. The spleen was approximately twice the normal size. On cross section, the cut surface was pale red and the follicles indistinct. Some enlargement of the visceral lymph nodes also was noted. The heart, lungs, and kidneys did not show any remarkable gross alterations.

HISTOLOGIC EXAMINATION

Sections of the liver showed pronounced infiltration of the hepatic tissue with large mononuclear cells of a type derived from the reticuloendothelial system. The infiltrating cells occurred singly and in clusters in the hepatic sinusoids and also in large, nodular accumulations compressing and replacing the liver tissue. Both the liver parenchyma and the periportal tissue

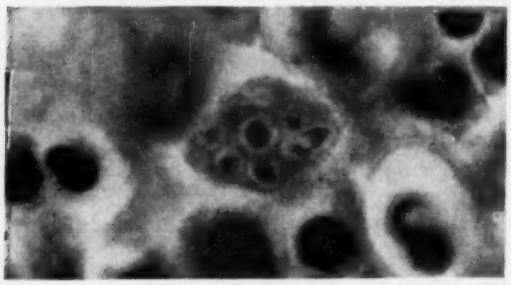

Fig. 3—Same as figure 2.

were involved by the cellular infiltration. In addition, the hepatic sinusoids that were patent contained abnormally large numbers of monocytes, lymphoid cells, and granulocytes. Many of the large, mononuclear phagocytes in the liver contained numerous, engulfed, yeastlike organisms morphologically typical of *H. capsulatum* as it occurs in tissues (fig. 1). The individual organisms were smaller than red blood cells and were round or oval in contour. The body of the organism stained unevenly with hematoxylin and was surrounded by a narrow unstained or clear zone at the periphery.

Sections of the spleen and visceral lymph nodes showed the same general type of pathologic alteration observed in the liver. The lymph nodes, their pericapsular connective tissue, and the red pulp of the spleen were diffusely infiltrated with the same type of large, mononuclear, reticuloendothelial cells forming the infiltrations in the liver. Numerous, intracellular yeast forms of *H. capsulatum* were found in all of these tissues (fig. 2 and 3). There were no necrotic lesions or pseudotubercles in any of the sections examined.

The heart blood was not examined carefully until the sections revealed the presence of the organisms in the tissues. It was then discovered that the case could have been diagnosed by examination of the heart blood alone. There were numerous, large, mononuclear cells in the blood smear with well-stained intracellular yeast forms of *H. capsulatum*. The organisms were either round or oval and consisted of a central dark staining body surrounded by a clear, unstained zone. The central body of some of the oval-shaped organisms showed a signet ring structure (fig. 4).

The diagnosis of systemic histoplasmosis was made on the basis of the histologic findings.

DISCUSSION

The character of the disease, in this case, closely resembled reported descriptions of the disease as it occurs in man and dogs[3, 4, 5]. According to established concepts, histoplasmosis generally occurs as a systemic disease and is usually fatal.

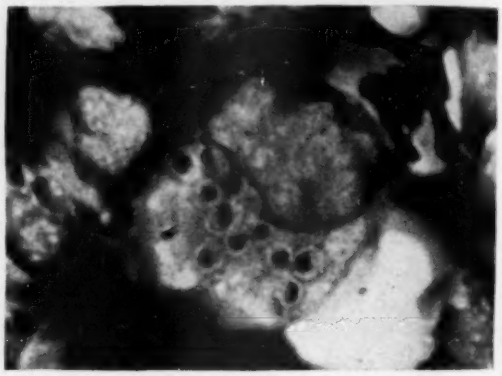

Fig. 4—Organisms within a large mononuclear cell in a smear of the heart blood. x 1600.

However, the possibility that histoplasmosis and blastomycosis may have benign, self-limited forms corresponding to the Valley fever type of coccidioidomycosis has recently been suggested[6].

The rôle of fungus infections, such as histoplasmosis, blastomycosis, and coccidioidomycosis in pulmonary disease of man has been receiving special attention in recent years. Calcified pulmonary lesions among tuberculin-negative persons have been found to be particularly prevalent in certain areas of the United States. The rôle of fungus infection in the causation of these lesions remains to be determined, but some observations have been published suggesting that many of these lesions may be mycotic in origin[7].

SUMMARY

A case of spontaneous histoplasmosis in a dog is described, and reference is made to 5 previously reported cases. The course of the disease was chronic, and the outstanding clinical symptom was gradual emaciation. The significant postmortem findings were enlargement of the liver, spleen, and visceral lymph nodes. The diagnosis was based on microscopic demonstration of yeast forms of the fungus *Histoplasma capsulatum* within large mononuclear cells in the blood and tissues.

Since this report was submitted for publication, Dr. Parsons brought another dog affected with histoplasmosis to the laboratory. The second dog was a 1½-year-old female, sired by the Pit Bull Terrier described above. The gross and microscopic pathologic alterations in the daughter were similar to those in the sire, with the exception that organisms were not found in smears of the blood.

Bacteriologic examination of the liver and spleen of the second case yielded a pure culture of *Histoplasma capsulatum* which was identified by Dr. C. W. Emmons, mycologist of the U. S. Public Health Service.

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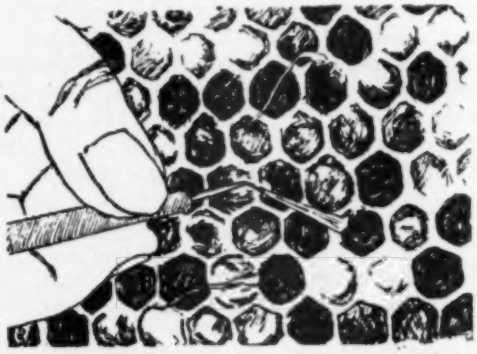
[7]Palmer, C. E.: Nontuberculous Pulmonary Calcification and Sensitivity to Histoplasmin. Pub. Health Rep., *60*, (May 11, 1945): 513.

St. Louis Encephalitis

Hammon, Reeves and Izumi (*J. Exptl. Med.*, March, 1946) tested guinea pigs, cats, and horses by peripheral injections to learn their aptitude to carry the virus of St. Louis encephalitis in their blood as a source of mosquito infection and also tested chickens, ducks, and doves for the same purpose. None of the mammals showed viremia enough to incriminate them as reservoirs of the specific virus. Chickens, however, were found to be highly susceptible to infection from minute amounts of the virus when subcutaneously inoculated. Sixteen hours after inoculation, virus appeared in their (chickens') blood and remained up to the 120th hour. The fowl did not sicken from the injection.

American Foulbrood

There is no serious disease of domestic animals as little spoken of in veterinary science literature as foulbrood of bees. (The bee *is* an animal, and it *is* domesticated). The Germans call the disease *faulbrut* and the French *loque maligne*. The authors (*Encyclopédie Périodique Vétérinaire*) recognize American foulbrood and European foulbrood, both of which are due to specific microörganisms, the former to *Bacillus larvae*, described as a motile, spore-forming, gram-positive, aëro-anaërobe, well known to bacteriologists. It was isolated and named by White in America in 1904, and in 1906 by Burri in Switzerland and Maasen in Germany. All breeds of bees are susceptible. The spores are carried by the nurses to the larvae nesting in the open combs, according to recent studies in France and England. Direct transmission from larvae is also entertained. The pillage of contaminated hives by carrier bees is, however, believed to be the chief mode of transmission. The inoculation takes place at the earliest stage of larval life, and the disease can be seen clearly before the alveoli of the combs are closed. Instead of being arranged in even rows, they are irregularly disseminated and the coverings are flat or concave and torn by



—*From Encyclopédie Vétérinaire Périodique*

Clinical Aspect of American Foulbrood. The opercules of the alveoli are effaced and the brown dead larvae are shown.

bees attempting to remove the cadavers. The odor is that of sour glue, and the dead larvae have the character of a viscous mass of melted rubber. The diagnosis is confirmed by microscopic examination which offers no difficulty. The eradication is effected by rigid sanitary direction consisting of the removal of the swarm to new hives, while the former habitation is either burned or thoroughly disinfected. In severe contamination, this procedure may require complete destruction of all the hives of the colony. Details may be obtained from experts in apiculture. There is no space here for them.

European foulbrood answers to the same general description except for certain modifications for the organisms involved.

Survey of Diseases

At a meeting of the directors of experiment stations and research workers in animal disease in the thirteen southeastern states some time ago, a committee was appointed to make a survey of diseases. At a later meeting, Feb. 7 and 8, 1946, the committee reported to the parent group, and its findings are (in part) as follows:

> Your committee wants to emphasize the fact that research work in animal diseases is time-consuming and requires substantial financial support. Work with animals is expensive both from the standpoint of initial cost and maintenance. In support of these facts it should be realized that extensive animal disease research is imperative to the establishment and maintenance of a sound and successful agriculture.
>
> In making this report, your committee is of the opinion that duplication of work by several states is desirable in some instances but that there should be coördination of effort so that final results may be obtained as soon as possible with the least expenditure of funds."
>
> There follows a list of disease problems which require further research and on which additional information is of paramount importance to the livestock producers of that area. The diseases are listed by species, and approximately in the order of importance.
>
> *Cattle.*—(1) brucellosis; (2) mastitis; (3) anaplasmosis; (4) Johne's disease; (5) internal parasites (stomach worms, intestinal worms, nodular worms, hookworms, flukes, lungworms, trichomonads, coccidia, and other species of importance); (6) pneumoenteritis of calves; (7) pinkeye; (8) milk fever-acetonemia complex; (9) respiratory diseases.
>
> *Swine.*—(1) brucellosis; (2) erysipelas; (3) internal parasites (*Stephanurus dentatus*, Esophagostomum sp., Metastrongylus sp., and other species of importance); (4) enteritis complex; (5) respiratory diseases; (6) nutritional diseases.
>
> *Poultry.*—(1) fowl typhoid, pullorum, and paratyphoid complex; (2) leucosis complex; (3) reproductive disorders; (4) tapeworms in chickens; (5) enteritis complex in turkeys.
>
> *Sheep and Goats.*—(1) internal parasites; (2) nutritional diseases; (3) pneumonia complex.
>
> *Work Stock.*—(1) nutritional diseases; (2) internal parasites; (3) infectious anemia; (4) diseases of the central nervous system; (5) skin diseases.

The committee which compiled this list is constituted as follows: Dr. E. P. Johnson, Virginia, *chairman;* Dr. J. C. Miller, Tennessee; Dr. W. L. Oglesby, Louisiana; Dr. A. L. Shealy, Florida; Mr. B. L. Southwell, Georgia.

Skin Allergy in a Horse

A horse that had been suffering from a skin irritation of the head, neck, and saddle region for three years was definitely shown (*Sci. News Letter,* July 6, 1946) to be allergic to a combination of wool dye in saddle soap and sulfonated neatsfoot oil in a leather conditioner. Either substance alone was harmless, but when the two were combined skin tests were strongly positive.

Scalp Ringworm

Copper undecylenate has proved effective in the treatment of scalp ringworm in children *(Sci. News Letter,* July 6, 1946), and it may presumably be expected to have the same favorable effect on farm animals. Salicylanilide is another chemical that has given favorable results as a fungicide.

The cattle population has decreased markedly in all countries except Soviet Russia. The decrease for North America (Canada, Mexico, U. S. A.) in 1944 was 2,000,000 and for Europe 6,000,000, while Russia showed an increase of 3,700,000. The total cattle population of the world in 1945 was 710,000,000. During the latter year, the United States dropped 2,100,000 below the 1944 figure.—*From American Cattle Producer, May 1946.*

A Case of Bovine Listerellosis in Pennsylvania

Listerellosis in a goat was reported in Pennsylvania in 1943, and in a sheep in 1944[1] but, to the author's knowledge, no cases in cattle have been previously reported in this state.

On Feb. 17, 1946, I was called to see a 10-year-old Guernsey in a herd of about 15 animals. The history revealed that the owner had been treating the cow's right eye for two weeks with boric acid solution because of a persistent lacrimation.

At noon of that day, the cow, frothing at the mouth, was turned into the yard where she showed a staggering and stumbling gait; she was returned to her stall. She had been born on the farm and new animals had not been purchased since October, 1945.

When examined about 3 o'clock in the afternoon, she showed the following symptoms:

Temperature 102 F., pulse 72. Her movements were incoördinate and aimless; the right ear drooped; the right nostril was smaller than the left; the right eyelid drooped and the right eye exhibited profuse lacrimation. Pupillary reflex was normal, but there was almost complete absence of the corneal reflex. No keratitis was present. The inner surface of the right ear was sensitive to stimuli. Masseter muscles showed marked trembling. Rumen activity was normal. Feces appeared normal. She ate a little hay.

A tentative diagnosis of listerellosis was made, and the subject was sent to the Veterinary Hospital, University of Pennsylvania, for observation and to prepare for cultural studies.

Her temperature remained normal, but increasing central nervous disturbances were noted, including a tendency to circle to the right and marked clonic spasms of the masseter muscles when excited.

The cow died the morning of February 19, and no gross lesions were found in the brain, *post mortem*.

Suitable specimens of the medulla oblongata were removed as aseptically as possible and sent to three different laboratories for examination.[2, 3, 4] All three reported the presence of pure cultures of *Listerella monocytogenes*.

A spectographic analysis of the liver revealed no evidence of metallic poisoning[5].

Several species of animals and man are susceptible to this disease and, as there have been increasing numbers of animals exhibiting central nervous symptoms of undiagnosed etiology, it is suggested that brain cultures for the presence of *L. monocytogenes* be made whenever possible in such cases.—*W. B. Boucher, V.M.D., University of Pennsylvania.*

[1]Personal communication from Dr. C. P. Bishop, director, Bureau of Animal Industry, Harrisburg, Pa.

[2]Dr. George C. Poppensiek, Lederle Laboratories, Inc., New York, N. Y.

[3]Dr. David Crisman, bacteriologist, Dalare Associates, Philadelphia, Pa.

[4]Dr. D. L. Coffin, University of Pennsylvania, Philadelphia, Pa.

[5]Dr. David Crisman, bacteriologist, Dalare Associates, Philadelphia, Pa.

The eye is the most expressive organ of the body, and should be watched closely in making an examination.

Ramon's New Biological Treatment of Tetanus

G. Ramon, of toxoid fame, has reported a "sero-anatoxitherapy" for tetanus that is attracting unusual attention in science literature. In effect, the immunologic observations made in the course of the treatment show facts that justify its use instead of the massive antitoxin treatment previously employed. Moreover, as a preventive, smaller doses of antitoxin can be used. It seems that anatoxin injection interferes with the dangerous fixation of tetanic toxin on nerve cells and renders it more accessible to the neutralizing action antitoxin.

The technique in horses consists of a 20-cc. subcutaneous injection of anatoxin treated with tapioca followed in fifteen minutes with an intravenous or intramuscular injection of 150,000 to 200,000 units of antitoxin of high neutralizing value* such as Ramon and his coworkers have been able to produce. The same course is repeated in four or five days. Various authors have announced the curing of horses and a dog gravely attacked with tetanus by means of this sero-anatoxitherapy.

*Among the wartime literature on the production of tetanus antitoxin, *serum antitetanique*, which the French authors, Ramon and his collaborators, wrote was that on the influence of dietary deficiency in horses on the production of quality tetanus antitoxin (*Compt rend. Soc. Biol., 138, (1944)*: 293).

An Improved Method of Testing for Botulinus Toxin by the Use of Penicillin

E. R. QUORTRUP, D.V.M.
Bowie, Maryland

WHILE MAKING routine tests to determine presence of botulinus toxin in thousands of suspected water samples, soil extracts, etc., at the Bear River Wildlife Disease Research Station at Brigham, Utah, it was not found practical to employ the conventional method of filtering the sample to produce a bacteria-free filtrate when a mere screening test was desired. For such purposes, therefore, 0.5-cc. amounts of clear supernatant fluid, or paper filtrates of cloudy material, were inoculated into 20-Gm. white mice and a duplicate dose, together with 0.5-cc. of antitoxin, into another mouse.

The symptoms of botulism in mice are quite readily recognized by the experienced worker, but errors in such a rough screening test are bound to occur, so an improved method was sought. Field samples containing an adequate amount of botulinus toxin are not difficult to test, but there are borderline cases not easily interpreted, where contaminating bacteria, as well as small amounts of toxin, contribute to the death or illness of the test animals.

Filtrations of weak solutions of botulinus toxin through porcelain candles may result in complete or partial detoxification of the sample. As an example, it was found that whole broth cultures in dilutions of 1: 100, 1: 1,000, 1: 10,000, 1: 100,000 and 1: 1,000,000, when inoculated into mice in 0.5-cc. amounts, resulted in death in three, four, seven, eight, and nine hours, respectively. After candle filtration of the same dilutions, the potency was reduced to a killing time of four, nine, seventeen, and thirty hours, respectively, and the 1: 1,000,000 dilution was completely detoxified.

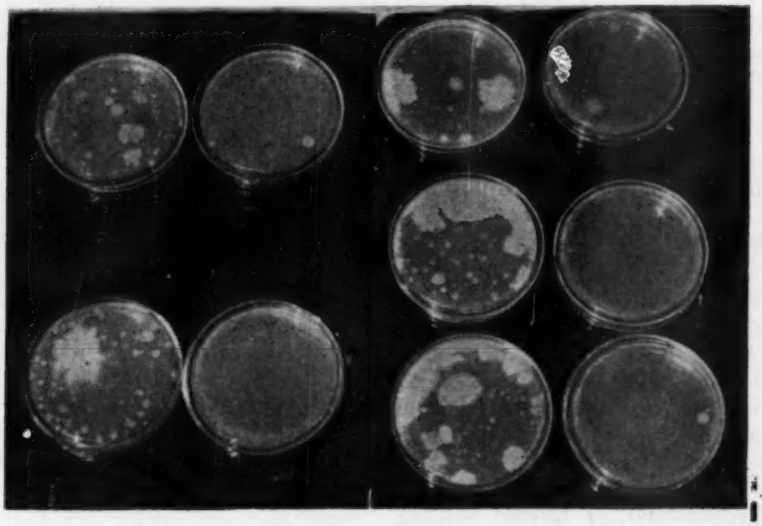


Fig. 1—Five agar plates inoculated with untreated field samples and five plates inoculated with identical samples plus penicillin. Note the scarcity of growth in the plates containing penicillin.

These data led us to assume that, if a crude field sample contained only one or two mouse m.l.d.'s of toxin, this small amount of toxin might be expected to be lost in the process of producing a sterile filtrate. Therefore, a search was made for bacterial antagonists which would not interfere with the potency of the preformed toxin.

It was found that penicillin is highly bac-

The author is from the U. S. Fish and Wildlife Service, Patuxent Research Refuge, Bowie, Maryland.

bacteriostatic for *Clostridium botulinum*, type C, but that it has no effect on the preformed toxin. Following this observation, exploratory tests were made on the inhibitory action of penicillin on the soil and water organisms commonly contaminating our field samples and which we desired to eliminate. Agar plates were set up in duplicates and

Table I—Results of Mouse Inoculations with Field Samples Alone, Field Samples Plus Penicillin, and Field Samples plus Penicillin and Antitoxin.

Sample number	Field sample alone	Field sample + penicillin	Field sample + penicillin and botulinus antitoxin
1	L	—	
2	L	L	—
3	L	—	
4	—		
5	—		
6	—		
7	L	L	—
8	L	L	—
9	L	L	—
10	L	—	
11	—		
12	L	L	L
13	L	L	—
14	L	L	—
15	—		
16	L	—	
17	—		
18	—		
19	—		
20	—		
21	L	—	
22	L	L	—
23	—		
24	—		
Total	13	8	1

L = Lethal; — = Negative.

field samples poured into the agar while still liquid. In one set of the plates, 26 units of penicillin per cubic centimeter of medium was incorporated along with the field sample. All the plates were then incubated at 37 C. for forty-eight hours, and a marked inhibition of all bacterial growth was observed in the plates containing penicillin.

The accompanying table shows the results of an experiment conducted to determine the value of penicillin in botulinus toxicity tests in routine work. It will be seen that 13 of 24 field samples killed mice following the initial inoculation. When penicillin was added to the same samples, only eight of the 13 toxic samples killed test mice, which means a reduction of false reactions by approximately 38 per cent. The remaining eight toxic samples were then inoculated together with 75 units of botulinus antitoxin, and all but one survived. Our interpretation is, therefore, that seven of the samples contained botulinus toxin and that only one sample killed due to some undetermined cause. Had penicillin not been used, there would have been six false reactions and seven botulinus-positive reactions.

Utilizing these observations, all crude field samples examined for the balance of the 1944 season at the Bear River Laboratory were tested in the following manner: 100,000 units of penicillin were diluted in 250 cc. of saline solution resulting in 400 units per cubic centimeter. Crude test samples were then set up in 1-cc. amounts and one drop of the penicillin solution added, which would represent approximately 26 units of penicillin per cubic centimeter. One-half cc. of this mixture was then injected into 1 mouse and the other half into another mouse, together with 75 units of botulinus antitoxin.

It is felt that a considerable improvement was accomplished by the use of this method through the reduction of mouse losses due to contaminating bacteria. It should be emphasized that, in the tests discussed, we were not interested in isolating Clostridium organisms but merely in determining the presence of toxin. The objectionable organisms eliminated by the use of penicillin were chiefly Bacillus spp. and a variety of gram-positive Coccus.

TDE

TDE, an impurity sometimes found in DDT, is pronounced deadlier than the parent product as a mosquito larvicide and more persistent after the use of dust and sprays over infested waters. Preliminary laboratory tests made in different mediums by Deonier and Jones of the USDA (*Science*, Jan. 4, 1946) show promising results and the feasibility of manufacture on a commercial scale.

The discovery that sulfanomides act against microörganisms by depriving them of the metabolite, paraaminobenzoic acid, has many biological implications—some good, some bad. It sheds new light on the danger of self-medication—on the fact that there is more to medicine than just swallowing pills.

Listerellosis in a Hereford Cow

CLARENCE R. COLE, D.V.M., M.S.
Columbus, Ohio

SPONTANEOUS listerellosis in animals and man has been reported from at least 17 states in this country but, to my knowledge, this disease has not been reported from Ohio in any animal.

A 7-year-old Hereford cow received at the Ohio State University Veterinary Clinic on Feb. 5, 1946, showed a disturbance of the central nervous system. The owner noticed the animal off feed on Feb. 4, 1946, and Dr. F. O. Haberman, of Centerburg, Ohio, saw the case on February 5. At that time, the cow had a temperature of 105 F. and was unable to open her mouth to take feed and water. The cow was blind, and the eyelids did not close when the corneas were touched. None of the other cattle or sheep on the farm were affected, and no livestock had been purchased previously. Similar cases had not appeared in the surrounding community. Dr. Haberman decided that hospitalization would be best for the animal and delivered her to the veterinary clinic.

Dr. Walter R. Krill conducted the physical examination and directed the hospital care. The following symptoms were manifested: temperature 105 F., dry and rough hair coat, loss of weight, weakness, dehydration, and blindness of both eyes, with a serous discharge from the right one. Further examination of the eyes revealed that the blindness was due to extreme contraction of the pupils. The eyeballs were held in a fixed position, and the eyelids of both eyes were drawn back tightly. The exposed cornea was dry and eroded.

Since the oculomotor nerve is the motor nerve supply to both the sphincter pupillae and levator palpebrae superioris muscles, irritation of the oculomotor nerve may have been responsible for the constricted pupils and widely opened eyelids.

The mandible was pulled to the right, and saliva flowed from the mouth. While circling to the left or right, she often collided with the sides of the stall. The right ear drooped while the left was held in the normal position. Muscular twitching and trembling were noticed in the face, neck, and shoulders. Lack of extension of the fetlock joint (cocked-ankle) resulted in lameness of the right hind limb.

Three complete blood counts made on successive days indicated an unsatisfactory response to a subacute infection and an unfavorable prognosis. There was no increase

Hemogram

	Feb. 5	Feb. 6	Feb. 7
Hemoglobin (Gm. per 100 cc.)	14.1	13.2	12.9
Erythrocytes (millions)	7.26	7.38	5.54
Leucocytes (thousands)	14.05	10.20	6.80
Segmented Neutrophils	4,918	2,448	2,584
Nonsegmented Neutrophils	4,356	918	740
Lymphocytes	3,794	6,018	2,720
Monocytes	421	510	680
Eosinophils	421		
Basophils			68
Myelocytes	140		
Smudge cells		306	

of monocytes above normal, even though the hemogram showed a slight but insignificant rise in their number, from 421 to 680 per cubic millimeter of blood.

Twelve cc. of cerebrospinal fluid were aspirated by a spinal puncture at the occipital-atlantal junction, using a 19-gauge needle 5 in. long. The cerebrospinal fluid showed cloudiness and flocculi of fibrin, and contained 211 leucocytes per cubic millimeter. Over 200 cells per cubic millimeter are considered a marked increase. From 6 to 12 small lymphocytes are found in cerebrospinal fluid from normal animals.

Quantitative analysis of the supernatant liquid from a centrifuged sample of cerebrospinal fluid demonstrated that the amount of protein was increased to 40 mg. per 100 cc. (normal value is 34 mg. %). Glucose was reduced to 28 mg. per cent (normal is 37 mg. %); chlorides, expressed as sodium chloride, was reduced to 657 mg. per cent (normal is 685 mg. %).

Sediment from the centrifuged fluid was stained with Wright's and Gram's stains and showed small, gram-positive, rod-shaped bacteria, leucocytes, and fibrin upon micro-

scopic examination. Normally, fibrinogen is absent in cerebrospinal fluid, so the presence of fibrin and large numbers of leucocytes and bacteria, along with increased protein and decreased glucose and chlorides, was highly indicative of a bacterial infection of the meninges, spinal cord, or brain.

Clinically, a diagnosis of meningoencephalitis was made. It was thought that *Listerella monocytogenes* was the etiologic agent.

During hospitalization, the cow was unable to eat or drink, had no bowel movement, lost weight, the body temperature gradually declined, and she died on the fifth day in the hospital.

At necropsy, congestion of the meninges and brain was noted as well as flocculi of fibrin, subdurally. A reddish gray color and a soft consistency of the medulla oblongata, due to inflammation, could be seen grossly. The hard, dry ingesta found in the rumen and the putrefaction of the intestinal contents, no doubt, was due to lack of gastrointestinal motility during the course of the disease.

Histopathologic and bacteriologic examinations were made of many portions of the brain. Microscopically, the main lesions were confined to the meninges and medulla oblongata which showed perivascular and focal infiltration of monocytes, lymphocytes, and polymorphonuclear leucocytes, with some scattering of leucocytes in the brain tissue. Tissue sections from the cerebrum, cerebellum, hippocampus major, and cervical spinal cord did not show inflammation.

The bacteria cultured from the brain were identified as *L. monocytogenes* by the Department of Bacteriology. A pure culture of these bacteria induced conjunctivitis and keratitis in a rabbit inoculated supraconjunctivally. Blood counts on the infected rabbit showed a leucocytosis and slight monocytosis. Exudate from the eye contained large numbers of monocytes, eosinophils, and neutrophils.

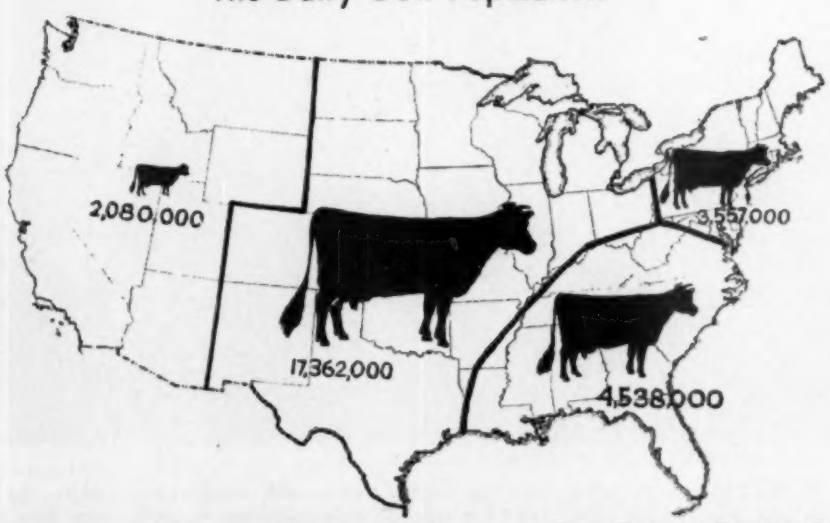
The lesions of the medulla oblongata and the response of the rabbit to inoculation with a culture of *L. monocytogenes* from these lesions were characteristic of listerellosis.

All of the laboratory examinations confirmed the clinical diagnosis. A final diagnosis of listerellosis was made.

Poliomyelitis and Rabies

Antirabies vaccine prepared by the Fermi technique is employed in the treatment of poliomyelitis (infantile paralysis) by an Argentine physician. Important results were obtained even in cases of a month's duration (*J. Am. M. A.*, June 6, 1946). Acute cases were treated with blood serum from persons who had been given antirabies treatment. The action of antirabies vaccine in that rôle lends itself to various explanations within the scope of scientific drug dynamics.

The Dairy Cow Population



—From Guernsey Breeders Journal

Dairy cows over 2 years old in the United States in 1945 and their geographic distribution.

—*Journal of Animal Science*

Fig. 1—Pig fed basal ration with desiccated egg white. Note hair loss, spasticity of hind legs, cracks in feet, and dermatosis characterized by dryness, roughness, and a brownish exudate.

—*Journal of Animal Science*

Fig. 2—The 2 pigs in the middle were fed the basal ration with desiccated egg white; the 2 pigs on the outside were fed the same ration but received daily injections of biotin. Note how biotin prevented the syndrome shown by the 2 pigs in the middle.

NUTRITION

Biotin Deficiency in Pigs

A biotin deficiency was produced in pigs fed a specially prepared ration which contained 30 per cent desiccated egg white and other purified food substances — sucrose, lard, vitamins, and minerals. On this ration, feed consumption per pound of gain was increased by 50 per cent, while the daily rate of gain was reduced 45 per cent. The experiment was conducted by Cunha, Lindley, and Ensminger, of the State College of Washington, and reported in the *Journal of Animal Science* (vol. 5 (May, 1946): 219-225).

Parts of the report and pictures of the experimental animals are reproduced here because the condition has a practical interest to veterinarians and may be met in practice in certain sections of the country. The biotin deficiency, as reported, is due to the feeding of egg white, and it may occur when eggs unfit for human food are salvaged by feeding to pigs. The egg white contains a protein called avidin which forms a nonabsorbable complex with biotin. This compound is formed in the intestine and it involves utilization not only of the biotin contained in the ration but also of that portion which is synthesized by bacterial action in the intestinal tract.

(See opposite page for fig. 1 and 2.)

—*Journal of Animal Science*
Fig. 3—Note cracks in feet of pig on deficient ration.

The experiment was conducted on a paired-feeding basis in which the feed intake of all pigs remained constant and was determined by the amount consumed by the pig with the smallest appetite. The pigs were fed individually and kept on raised floors in order to prevent coprophagy (the eating of feces) which would have disturbed the vitamin balance that had been minutely calculated.

The condition which developed is shown in the illustrations; symptoms began to appear in less than three weeks of feeding on the experimental ration. Hair was lost from the posterior aspect of the hams, and the alopecia proceeded over the back and sides of the body. Such hair as remained on the body was found to be loosely at-

—*Journal of Animal Science*
Fig. 4—Cracks are not present in feet of pig receiving biotin injections.

tached. Dermatosis, appearing concurrently with the alopecia, was characterized by dryness, roughness, and a brownish exudate. At about the fifth week of the feeding period, the feet developed cracks, as shown, and the hind legs became spastic at about the same time.

The experiment was terminated at the end of six weeks because there was no more dried egg white. No report regarding degree or rate of recovery of the affected animals is given, but the syndrome was prevented in a control lot of pigs by daily intramuscular injection of 100 mg. of crystalline biotin per pig.

While it is unlikely that so severe a form of biotin deficiency will be frequently seen under field conditions, this is one more condition which one must consider when called upon to make a diagnosis involving lameness in swine.

Chicks, when on a ration deficient in biotin, also often develop hemorrhagic cracks and incrustations in the bottoms of the feet.

Present Knowledge of Vitamin A in Nutrition

Vitamin A is found only in the animal-kingdom where it occurs, presumably, in all species of fish, birds, and mammals, says *Nutrition Reviews* (March, 1946). The source of all vitamin A in the animal kingdom, so far as is known, is in the carotenes and certain closely related carotenoid substances which are synthesized by all plants except the parasites and saprophytes. Fish make it from the carotenoids of the marine plankton, and herbivorous land animals from the carotenoids of the green, leafy foods on which they graze. Carnivorous animals depend for their supply upon the meat of herbivores, in which vitamin A already has been transformed from carotenoids.

Two kinds of vitamin A are now recognized. In addition to the A_1, which has long been known to occur in sea fish oils; there is an A_2 found in the oils of some fresh water fish.

Present information indicates that carotene and the carotenoids can only be converted from their provitamin stage to true vitamin A in the liver. The process has not been recognized or demonstrated elsewhere in the body.

Maintaining the epithelial tissues in normal condition is the most common and best known function of vitamin A in the animal body. Just how this is being accomplished is not known. Another function is participation in the visual cycle, the series of events by which dim vision is mediated in the rods of the retina.

Apart from the hemeralopia of vitamin A deficiency, most of the other pathologic changes follow upon a single cytologic change, one which affects the mucous membranes throughout the body. Under such conditions, the epithelial tissues atrophy while their basal cells proliferate, giving rise to a keratinizing epithelium comparable with epidermis. This keratinizing epithelium is open to bacterial invasion; consequently, severe infections of the eye (xerophthalmia), respiratory organs, genito-urinary tract, and mouth have been observed in severe vitamin A deficiency. In young mammals, skeletal growth is retarded by such deficiency before the growth of the soft tissues is affected.

The really anti-infective property of this substance may better be expressed as an appetite stimulating action for, with reduced food intake, there is a corresponding increase in susceptibility to various types of infections on the several mucous membranes of the body.

Animal Protein Needed

. New Hampshire pullets, fed for one year at Delaware by Hoffman and Tomhave on a ration containing 1.25 per cent animal protein from meat scrap, maintained neither body weight nor egg production during the second half of the period. A similar group of pullets fed a ration containing 6.75 per cent animal protein from dried skimmilk and meat scrap had better records on these observations. Both groups were fed adequate amounts of protein consisting of soybean meal, distillers' dried grains, bonemeal, and alfalfa meal.

Norway's cattle (33 of them belonging to Hans Borgen, at least) survive happily on an emergency wartime diet of fresh herring and wood pulp.—*Chicago Tribune, April 5, 1946.*

Controlling Cannibalism

Cannibalism may include feather pulling, toe, head, wing, tail, or vent picking. The various manifestations of cannibalism occur in all types and ages of birds, but the lighter breeds are more susceptible. The vices usually start in flocks that are overcrowded or are confined with too little exercise, according to *Florida Agricultural Extension Service Bulletin 128.*

Nutritional deficiencies and heavy parasitic infections have, at times, appeared to be important factors in getting the habit started. Proper feed and management can certainly do much to prevent onset of trouble and, in the early stages, can help to hold it in check. The daily use of liberal quantities of green, leafy alfalfa hay as litter in the henhouse is recommended by Prof. C. M. Ferguson, poultry specialist at The Ohio State University, as an effective way to avoid or reduce the amount of cannibalism in a flock. The alfalfa hay diverts the attention of the birds to useful pursuits and away from the harmful one of picking at their pen mates.

Other flock owners have achieved the same results by providing other substances for the hens to pick. Cabbage, kale, beets, carrots, and suet have been mentioned at some time or other. The chief corrective measure seems to be to provide some worthwhile food material on which the flock can focus attention, thus diverting it from the destructive cannibalism.

When a flock has already acquired the vice, additional measures are in order. Sometimes, the addition of one tablespoonful of salt to each gallon of drinking water for two days will turn the trick. Or the addition of 2 per cent of salt to an all mash ration for two days, or of 4 per cent salt to the mash when both mash and grain are being fed, has been suggested.

Other devices used with variable success have been to paint the windows with a red water-soluble paint, to use red curtains, and to use a ruby colored bulb in the light socket. Some of these measures will be successful at times, but no one will be successful at all times. In some flocks, the practice may be controlled by placing a board walk some 12 inches in front of the nests and then hanging several layers of burlap between the walk and the house proper as a curtain. This will protect the hens for a few minutes after laying.

In all sections, there will be some flocks in which the vice has been so firmly established that none of the steps enumerated will be effective, whether used individually or in combination. As a final step, in flocks of that kind, the debeaking operation can be performed. This consists of removing the upper mandible back to the quick. This shortens it enough so that cannibalism is impossible, but not enough to interfere materially with prehension of food and drink. The operation may be performed with any sharp instrument or with a cautery set that has been especially designed for the purpose.

Flocks which have the habit firmly established are difficult to handle, and they are unprofitable. Therefore, it is well to emphasize the necessity of providing chicks with plenty of room, plenty of exercise, and plenty of feed for picking—in place of picking at their pen mates.

Feed Famine Over?

Some relief in the grain shortage, which has been a serious problem in the New England states, is being noted. The *Egg Basket* (H.P.Hood and Sons) reports that more grain shipments and higher market prices have helped to provide a ray of sunshine where only dark clouds had prevailed. Flocks throughout New England have been depleted to such an extent that there is a prospect of "egg lines" to replace the dwindling meat lines.

The same note of optimism regarding feed situations is reflected in a report from James A. McConnell, manager of GLF (in *Weekly Letter* of the Institute of American Poultry Industries), who says that with the expiration of OPA and the indications of a record-breaking corn crop along with near-record crops of wheat and oats, feed is being made because the ingredients are moving in a free market.

Feed shortages have necessitated drastic culling of flocks and herds, and it is expected that the healthy and efficient units now remaining will make proper use of the feeds available to them. Getting out of business is not the proper answer for the poultryman—getting on to a basis of utmost efficiency is more to the point.

The secretions of the anterior pituitary body and of the pancreas are antagonistic.

EDITORIAL

The Local Practitioner in Preventive Medicine

A play-by-play account of the general practitioner at work will always find him in scoring position, whether the problem at hand involves preventive or curative medicine. As a matter of fact, the general practitioner is astonished that he is thought to be too stupid to understand and to practice preventive medicine, a manifestly simple branch of his art, compared with the intricacies of surgery and medical practice. To claim less is not to know the successful general practitioner and his ways. The advice that he should practice preventive medicine is shop-worn and ill-conceived in the first place. It appears that those who have never practiced have little conception of the end to which the general practitioner goes in planning with his clients sanitation, management, feeding, watering, cleaning up, and watching every source of trouble among the animals entrusted to his care. Any veterinarian who has attended association meetings through the years has had many a painful hour listening to great experts regretting his abysmal ignorance of such profound things as feeding livestock, although he (the practitioner) would find it difficult to make a living without keeping abreast of the times on such basic matters as sanitation and hygiene.

In his presidential address before the Twelfth International Veterinary Congress (New York, 1934), Leclainche pointed out that the local practitioner is the key man in disease control for the reason that he alone is apt to be familiar with all the conditions involved: the farm, the pasture, the stable, the feed, the prevailing management, the owner, his wife, and the hired girl, all of which/whom may figure in the control program laid out. And, more recently, in a scholarly address entitled "Veterinary Practice, Present and Future," delivered before the North of Ireland National Veterinary Medical Association at Belfast, in February, Geo. N. Gould, M.R.C.V.S. (*Vet. Rec.*, June 16, 1946), spoke in the same vein. He said: "The practitioner has his part to play in the application of the requisite measures on the farm," and expressed the assurance that there is no fear that "state medicine" will ever attempt to dispense with his services. The client-practitioner relationship implies confidence (Gould) and inspires the coöperation needed in disease eradication.

Moreover, a first hand knowledge of the insidious maladies that harass the livestock farmer doesn't concern the "state man," bent only on "putting the law on" the given malady, although this may, and obviously does, destroy more food poundage than the reportable disease that brought him hither.

Statistics on the difference between the losses suffered from spectacular and non-spectacular diseases of livestock and poultry would answer the question as to whether farmers could dispense with local practitioners, provided the state would step in and master the major plagues. "Would the bulk of the practitioners be able to make a living on outbreaks of reportable contagions?" is the direct question to answer. Any busy practitioner's books should contain the reply to that one.

In short, there is no threat to veterinary practice from the state. Quite the contrary,— the mastery of grave outbreaks of disease enriches his clients and himself.

Prophetic?

When the war was still young, the JOURNAL said: "The real danger of the war lies in the distant future—the future of the underfed and their offspring." In 1943, at the height of hostilities another prediction reads: "Food's not as plentiful as most people think—not plentiful enough to make a push-ball out of treating sick livestock."

Registry of Veterinary Pathology*

"If veterinary medicine is to achieve a more respected, more lucrative, and more important status in society, it will have to do so by rendering greater service. If we want credit for being scientific, we must apply precise methods. If we are to do better than our confreres of a bygone day, we must have more and more scientific knowledge and then we, the everyday practitioners, must have the necessary acumen to make use of it.

"When a patient is presented to a medical man it is his duty to bring to bear *all* devices of medical knowledge relevant to the case. To do less than this is to betray the trust that was placed in him. As far as diagnosis is concerned, the one weapon we have gained since the early days of veterinary medicine is the use of laboratory facilities of various kinds. There is no reason to suppose that veterinarians of today have any more native intelligence than their forbears of a generation ago. Their eyes are no sharper, their ears no keener. We of today will do well if we equal our predecessors in the accuracy of diagnoses achieved by the simple physical examination alone. But great advances have been made in the science of chemical, microscopical, serological, and similar indirect methods of finding out the secrets of the living body.

"Human medicine avails itself of these aids continually. Veterinary medicine has been laggard in applying them. Some of these laboratory tests can and will be performed by the practitioner in the field or in his office. Others necessitate more elaborate arrangements. The question of expense is often raised by objecting voices. Actually most of these tests, when some convenient laboratory is set up to run them, add no more to the expense of treating a patient than the cost of driving an automobile five or ten miles. At any rate there can be no complaint on grounds of expense in referring histopathological cases to the Registry of Veterinary Pathology. The charges are exactly nothing.

"This new acquisition to the veterinarian's diagnostic armamentarium is already familiar to most veterinarians, but for those who have missed previous announcements the following may be repeated: The Registry of Veterinary Pathology, opened in 1944, is a part of the American Registry of Pathology, and is sponsored by the AVMA, the Surgeon General's Office of the Army, and the National Research Council. Its purpose is to build a collection of specimens, gross and microscopic, of all known pathological conditions in animals, with full data concerning their frequency and significance, to be used by research workers and others studying various aspects of disease in animals and man. A diagnostic service is offered to qualified veterinary practitioners on such specimens of diseased tissues as they may care to submit.

"The procedure is simple. Blocks of tissue or whole organs should be well fixed in formalin and then forwarded in ten per cent formalin or wrapped in cloths wet with same, to Director, Army Institute of Pathology, Army Medical Museum (Attention: Registry of Veterinary Pathology), 7th and Independence Ave., S. W., Washington 25, D. C. Full information concerning the history and clinical aspects of the case should invariably accompany the specimens.

"The tissue to be submitted is often derived from autopsies, but not necessarily so. The veterinarian must become more accustomed to the use of biopsies, where small pieces of tissue are purposely excised, under suitable anesthesia, from the living patient. Techniques have been devised for making biopsies not only from lesions on the surface of the body but also from such organs as the uterus and even the liver. Many specimens of doubtful nature also arise in the course of routine surgical excisions and curettements. The physician frequently bases his surgical and medical treatment on pathological diagnosis made from such material. The veterinarian should become more accustomed to their use if he is not to be left behind.

"Nor is the altruistic aspect to be ignored. Let each of us contribute our share to the masses of data which will

*Excerpts from a discussion by Dr. Hilton Smith, Department of Pathology, Iowa State College, concerning the value of this project.

someday provide the clues necessary for untangling the many baffling mysteries of biology."

Reducing Livestock Populations an Unmeasured Hazard

By its plowing-up campaign, when the war broke out, and intensive tillage, England increased agricultural production 30 per cent but, says the *Veterinary Journal*, the increment was achieved at the expense of livestock. The balance between arable acreage and livestock suffered a setback. There was a sharp decline in sheep, swine, and poultry, and the milk yield dropped, all on account of withholding feed from livestock to meet human needs. Quoting: "All this makes a sad story, and one shudders to think of what would have been the state of affairs if the war had continued into 1946 with its high demands, waste, and losses." Veterinarians are admonished to keep in touch with the situation and work toward reëstablishing the prewar ratio of farm animals to farm crops through breeding, hygiene, research, and attention to animal health.

Veterinarians and Associations

In the May JOURNAL (p. 363), an arrangement was reported which may show the way for coöperative effort between veterinarians and associations. State veterinary associations, livestock breeders' associations, and others have discussed the possibility of employing a veterinarian to promote the best interests of the group concerned. Some veterinary associations have spoken of the prospective veterinarian as a full-time secretary, others as a public relations veterinarian; universities have called him an extension veterinarian, and breeders' associations think of him as a disease-prevention or disease-control specialist.

The stumbling block in most discussions has been the problem of raising the money necessary to employ the type of veterinarian needed; everyone admits that only the best-qualified man should be employed.

In Wisconsin, the Great Lakes Mink Association and the United Mink Producers' Association have banded together to employ a pathologist. He will coöperate closely with veterinarians of the Department of Agriculture at the State Experimental Game and Fur Farm, and with staff members of the College of Agriculture.

Such an arrangement tends to bring problems in need of research to the laboratories equipped to do that research, and to carry the results back to the owners of herds, flocks, and ranches, who can make the best use of these results. It accomplishes a transfer of problems and results in a minimum amount of time, because there is a direct liaison from field to laboratory and *vice versa*.

The members of the sponsoring associations are also enabled to reap the full value of the money expended, for research problems are placed in the hands of persons trained and equipped to study them, while the employee of the association devotes all of his time to the problems of the several members of that association.

The moral appears to be that if one group is not able to sponsor the type of program contemplated, then two should band together to the mutual benefit of all the members of both. There is a provision for placing additional cost upon the recipient of additional service, and similar provisions could be worked out for joint employees in other fields.

County Veterinarians

The August issue of *Breeder's Gazette* contains the following editorial, which reflects the thinking and the needs of a considerable group of livestock breeders:

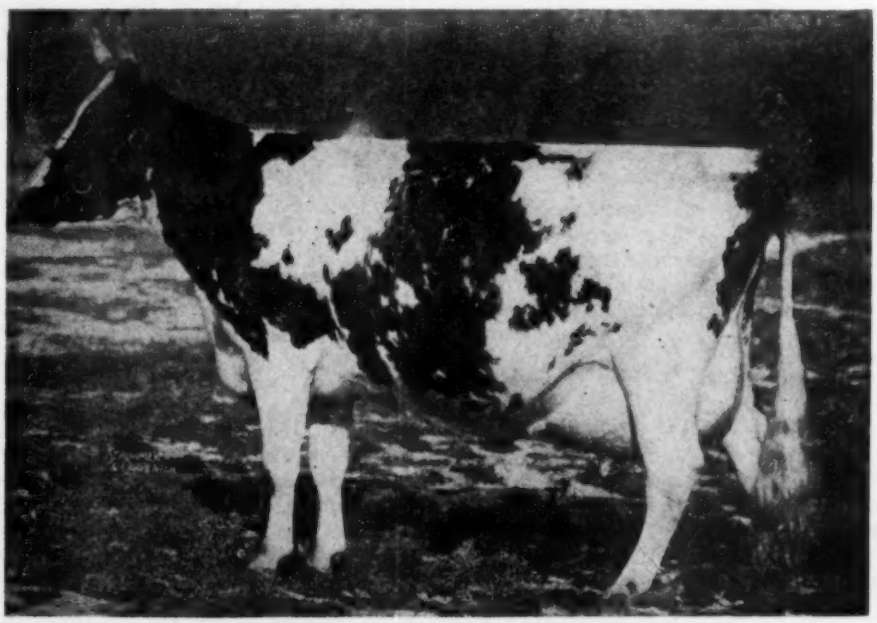
> At one time, shortly after the tuberculosis fight began, Illinois had 64 county veterinarians at work. More than half the Prairie State's counties appropriated from $4,000 to $6,000 a year, to which the State Department of Agriculture added $2,070. This got a trained livestock doctor, who devoted full time to testing for tuberculosis and Bang's disease. Having licked tuberculosis, many of the counties failed to appropriate, so that today Illinois has 29 county veterinarians. After a veterinarian is in a place a few years, he knows every breeder in the county and he becomes an effective livestock leader. The American Veterinary Medical Association meets in Boston, Aug. 19-22. If their resolutions committee will call for 2,500 county veterinarians, we livestock breeders will back them up, will we not?

Memorable AMA Session—Its Teachings

The ninety-ninth annual session of the American Medical Association at San Francisco was the largest meeting of physicians ever held on the Pacific Coast—1,000 more than the previous San Francisco session. The registration totaled 7,746 members (fellows), exclusive of nonmembers, ladies, and tags. Among actions taken for the betterment of medicine were (1) expansion of the field of medical economics, (2) the founding of a division to interpret the activities of the Association's components (bureaus, councils, committees, etc.), (3) planning the centennial anniversary of 1947, (4) changing the name "public relations," to "council of medical service," (5) a resolution urging the limitation of the health program of the United Nations to preventive medicine, standardization of drugs and biologic preparations, and the prevention of the spread of disease between nations, (6) opposing interference of government between doctor and patient, (7) proposal to hold midwinter meetings of the House of Delegates, and sundry matters of outstanding interest.

Worthy of note by veterinary medicine is the emphasis placed upon *economics* which the AVMA is attempting to hold out as the background of its activities, and discarding the term "public relations" which flairs of selfish propaganda, notwithstanding the altruistic motives it is intended to convey to the public mind. The holding of a winter meeting of the House of Delegates (House of Representatives) might be kept in mind as a useful prospective addition to the midwinter meeting of the Executive Board of the AVMA. The proposal to found a division charged with coördinating the work of the various working agencies is comparable to the frequent meetings of our Board of Governors. In other words, only continuous management can insure maximum success of a national society in the field of medicine. Only year-around watching and guiding suffices. The once-a-year convention as the governing agency lived too long in our field.

A new specialty not heretofore considered a part of clinical veterinary medicine is the pathology of the small laboratory animals: mice, rats, guinea pigs, hamsters, and rabbits.



—From The Ayrshire Digest

When Lucky Puff, the 19 1/4-year-old Ayrshire of the Strathglass Farms, Port Chester, N. Y., died, a survey of her accumulated record showed that she had produced 189,482 lb. of milk containing 7,598 lb. of butter fat in 5,235 milking days.

CURRENT LITERATURE

ABSTRACTS

Sulfaguanidine in Swine Coccidiosis

Prophylactic and curative value of sufaguanidine was demonstrated by discharge of fewer oöcysts for a shorter time following experimental infection with 20 to 30 million mixed sporulated oöcysts. The diarrhea which accompanies such infection was also controlled. —[*J. E. Alicata and E. L. Willett: Observations on the Prophylactic and Curative Value of Sulfaguanidine in Swine Coccidiosis. Am. J. Vet Res., 7, (April, 1946) (Part 1): 94-100.*]

Fowl Lymphomatosis Transmission

Tissues from the liver and spleen of a typical field case of lymphomatosis were transmitted into chicks through 15 passages and, in the last recorded passage, 59 per cent of the birds died with lymphomatous lesions before they reached the age of 100 days. Chicks brooded with inoculated birds, and chicks fed infective tissues developed a significantly higher incidence of lymphomatosis than did controls.—[*N. R. Brewer and B. Brownstein: The Transmission of Lymphomatosis in the Fowl. Am. J. Vet. Res., 7, (April, 1946) (Part 1): 123-128.*]

Hookworm Infection in Lambs

Lambs can be infected readily with *Bunostomum trigonocephalum* by applying the larvae to the skin. It was learned that a lamb to which 50,000 larvae had been applied percutaneously in one application harbored about 1,500 hookworms four months later. Smaller numbers of larvae applied at intervals appear to have much the same effect. Oral administration produced lighter infections than did percutaneous application.

Heavy infection with this hookworm caused lambs to become anemic, and the rate of growth was retarded. In severe cases, the hemoglobin and red cell values declined to about one-half normal levels, as observed in normal lambs. No effect on total numbers of leucocytes in the circulating blood was noticed, but all significantly infected lambs had a corresponding degree of eosinophilia and a slight tendency toward development of monocytosis and basophilia.—[*J. T. Lucker and Eleanor M. Neumayer: Experiments on the Pathogenicity of Hookworm (Bunostomum trigonocephalum) Infections in Lambs Fed an Adequate Diet. Am. J. Vet. Res., 7, (April, 1946) (Part 1): 101-122.*]

The Viability of Buried Seeds

When the War Department took over the land occupied by the Arlington Experiment Farm at Rosslyn, Va., in 1941, it stopped experiments on the longevity of buried seeds started by J. W. T. Duvel in 1902, or thirty-nine years before. The seeds of 107 edible plants and weeds were under test. Of the 107 species buried in 1902, 36 were still viable in 1941. The seeds were buried in flowerpots containing soil, 8, 22, and 42 inches below ground level and were studied for livability at stated periods during the thirty-nine years for recording the percentage of germinations. Of the 36 viable species, 16 showed 15 per cent germination and 20 of them, 6 per cent germination at any of the three levels.

Published reports of the germination of seed at the extreme ages of 158, 147, 60, 18 years, and so on downward are cited.—[*E. H. Toole and E. Brown, Agricultural Research Administration, USDA: Final Results of the Duvel Buried Seed Experiment, J. Agric. Res., 72, (March, 1946): 201-210.*]

Equine Laryngeal Hemiplegia

Of 174 larynges examined, 43 (27.04%) showed atrophy of one or more left laryngeal muscles, but only 25.8 per cent of the horses having varying degrees of atrophy of the laryngeal muscles actually showed symptoms of laryngeal hemiplegia from the amount of exercise given when testing them.

When atrophy of the laryngeal muscles was apparent, there were degenerative changes noted in the recurrent nerve on the same side. The degree of dyspnea shown was influenced by the proximity of the arytenoid cartilages and vocal cords. When the dilator muscles alone were atrophic, the constrictor muscles decreased the laryngeal capacity and produced more severe symptoms than if constrictor and dilator muscles were simultaneously atrophic.—[*C. R. Cole: Changes in the Equine Larynx*

Associated with Laryngeal Hemiplegia. Am. J. Vet. Res., 7, (April, 1946) (Part 1): 69-78.]

Rinderpest

The *American Journal of Veterinary Research* for April, 1946, was published in two parts, and Part 2 is devoted entirely to a series of manuscripts on rinderpest, all prepared by a group of veterinarians who worked at Grosse Isle, in the mouth of the St. Lawrence River. This material was published by special arrangement with the Joint United States-Canadian Commission of the Chemical Warfare Service, U. S. Army. The highly successful work of developing protective measures against rinderpest are detailed and include descriptions of improved methods of vaccine production through the use of chicken embryo transfers.—[*R. E. Shope, H. J. Griffiths, D. L. Jenkins, R. V. L. Walker, J. A. Baker, F. D. Maurer, James Terrence, A. S. Greig, M. W. Hale, H. K. Cooper: Rinderpest. Am. J. Vet. Res., 7, (April, 1946) (Part 2): 133-237.*]

The Control of Tuberculosis (Human)

Definite steps characterize the control of tuberculosis: (1) the discovery of the tubercle bacillus in 1882, (2) the coming of x-ray photography in 1895, (3) the founding of sanitoriums and hospitals, (4) the open air treatment superseded by hospital treatment, (5) education and control of the consumptives, (6) the eradication of bovine tuberculosis with attendant reduction in nonpulmonary tuberculosis, (7) pneumothorax and thoracoplasty, (8) early diagnosis, BCG vaccination (in Europe), (9) photofluorography, experimental chemotherapy, and antibiotics. These are the many measures which have reduced the mortality from 245 per 100,000 in 1890 to 31.3 per 100,000 in 1944.

The basic pattern for 1946 should include expansion of field services, research, adequate hospitals, outpatient facilities, and insurance for tuberculous persons and families. Eradication of tuberculosis has become a well-grounded expectation.—[*Editorial, Pub. Health Rep., 61, (July 5, 1946): 979-981.*]

BOOKS AND REPORTS

The Army's Permanent Dog Corps

Dogdom is gratified that the war had one happy result—the armed forces will have a permanent dog service. New canine recruits are being chosen and trained. That decision, as anticipated, was reached shortly after Japan surrendered last September. The K-9 Corps had justified itself despite the rapid training the donated dogs had received for field work. The new corps will be composed of dogs meeting specifications based upon actual war experience, on type, and on character. Not surprisingly, the German Shepherds did outstanding work as messengers, scouts, and sentries, and that breed has been selected. The recruits now sought will be purebred male dogs of that breed between the ages of 1 and 3½ years. The specifications are as exact in details as those once used in the procurement of horses and mules: height 24 to 26 in., and weight 70 to 90 lb. Solid white or too much white is objectionable. The price must not exceed $150. Much will depend upon the interest taken by dog associations and clubs which, no doubt, will insure a sufficient flow of dogs into the military service.—[*Editorial, Am. Kennel Gaz., 63, (July, 1946): 9-10.*]

Ohio Association Year Book, 1946

In the fashion organized, the annual publication of *Proceeding of the Ohio State Veterinary Medical Association* (Year Book) is a service of great value to the veterinary profession, current and historical. Comparable reports by 48 state associations would be a cherished possession indeed, a contemporary *what's what* and *who's who* in the building of the country's veterinary service.

The list of presidents and secretaries from 1883 to 1946, underlines such unforgettable pioneers as Fair, Newton, Cotton (T. B.), Meyers, Wight, Shepherd, Shaw, Axby, Cooley, Fulstow, Washburn, Sisson, Case, Hilty, Brumley, Edgington, Planz, Zimmer, and others whose names are indelibly etched on the veterinary-medical records of this country.

The present graduate veterinarians are listed by counties and earmarked as to their professional fellowship, *i.e.*, membership in the OSVMA and AVMA, Veterinary Corps of World War II, official position, college and year of graduation, and nonparticipants. A critical study of the latter brings out interesting facts about the influence of environment, college, and age on participation in the profession's development. For instance, Cincinnati and Cleveland show a delinquency of 50 per cent while Columbus, on the contrary, has but 13 per cent of regrettables. As to the two Ohio colleges concerned, Cincinnati has a delinquency rate of 55 per cent as against 26 per cent for Ohio State. In both instances, the older graduates are mostly accountable for the high percentage of nonparticipating graduates. Among the younger crowd, one can envisage the teachings of the lamented Dean Brumley as compared with that of his predecessor.

The veterinarians of the federal service in Ohio are grouped separately and listed as to their location and status. Of the 67 "federal men" catalogued, 19 are members of the AVMA,

6 belong to the OSVMA, and 42 are nonparticipants. An unhappy paradox is seen in the BAI force in Cleveland. Of 14 veterinary meat inspectors there, it is regrettable to note that none are connected with either the state or national association—an obvious reflection of the low salaries of former years.

The body of the book contains a series of committee reports, papers read, and panel discussions on major subjects by capable men (Stader, Schnelle, Weisner, Klussendorf, Zimmer, McCoy, Baldwin, Krill, Augsburger, Schalk, Hollenbeck, Edgington, Lies, and others who furnished the material for this Year Book.)

In the interest of the literature of which such books become new units, the reviewer, faithful to his task, will point out the care-free misuse of capital letters for the names of diseases, drugs, and other common nouns, *e.g.*, *V*itamin A (*et al.*), *G*uaiacol,, *P*enicillin, *M*olasses, *T*uberculosis, *A*cetonemia, *B*lack *H*ead, *B*rucellosis, to name a few at random. The use of italics or plain type for specified microörganisms is optional but whatever style is preferred should be used throughout the text of a book.—[*Year Book, 1946, Proceeding of the Ohio State Veterinary Medical Association. Edited and compiled by the secretary, Dr. F. J. Kingma, College of Veterinary Medicine, The Ohio State University, Columbus. Board. 126 pages.*]

Dogs in the News

Among other things, this book is a compilation of noteworthy episodes about dogs gathered from newspapers and magazines. That portion of its text recalls the "Animals that Make the News" column once run in the JOURNAL, which was discontinued because of the difficulty of separating the raw truth from the catchy fiction that is currently published on that subject. The intention to publish *Dogs in the News* annually and the organization of reporters set up in every state to collect material ought to make up an authentic documentation of considerable scientific importance, difficult as it is to wash out the sentimental balderdash that distorts the world's knowledge on canine zoötechnics.

The material is arranged by states, alphabetically, each in charge of a board (committee) of several members who are obviously chosen for their competence. For example, Drs. W. A. Young, director of the Anti-Cruelty Society of Chicago, and Dr. E. C. Khuen, small animal practitioner of Evanston, head the board for Illinois and Dr. A. L. Haggerty, Department of Health, Augusta, Ga., is chairman of the Georgia board. Part 1, 254 pages, vouches for the reliability of many a touching anecdote belonging in knowledge of animals.

Part 2, 230 pages, contains a wealth of reference material: (1) history and affiliates of the American Humane Association; (2) pet animal cemeteries of the United States; (3) makeup of the American Kennel Club, and its far-flung work, with facts about bench shows and recognized breeds; (4) antivivisection, a pack of insulting untruths which leaves a blotch on the beauty of an otherwise useful book; (5) Canadian section; (6) list of 35 dogs books and 33 dog magazines; (7) section on England with fascinating reports of dogs in air raids; (8) National Dog Week; (9) obedience training; (10) dogs of the stage and screen; (11) the veterinarian's creed by Dean R. R. Dykstra, veterinary associations and magazines, and humane awards of the AVMA; (12) war dogs and their disposal.

Besides containing a lot of excellent pickup reading, this book is broadly informative on the present status of the dog—the oldest and most generally possessed domestic animal. Because of being so preposterous, one can ever garner delight out of the chapter on antivivisection.—[*Dogs in the News. Compiled by "Dear Dog Lady" (unidentified). Cloth. 484 pages. The Paerbar Company, New York, 1946. Price $3.75.*]

Poor Thermometers

Accurate thermometry, as well as facile readability of thermometers, in some respects, is more important in veterinary than in human medicine. Besides its significance in clinical diagnosis and therapeutics, body temperature provoked in allergic tests has a legal borderline governing the disposal of the tested subject. The need of removing poor thermometers from the market is, therefore, a worth-while reform in our field. The Council of Pharmacy and Chemistry points out (*J. Am. M. A.*, May 11, 1946) that many clinical thermometers are of poor construction, range widely in readings, and have indistinct markings. The Council suggests that steps be taken to establish acceptable standards for thermometers and other devices.

Fine idea! "But," says an old timer of the S. O. S., "try to sell one." Even the buyers from the best hospitals scan the price column, first off. The advantage of superfine thermometers, scalpels, and scissors no one questions, but mass demand for them just does not exist. The competition against trash from Japan and Germany was too stiff while they lasted, and that is not armchair guessing. Indianapolis veterinarians will recall a maker of fine scalpels (and they *were* fine) who never got to first base against the pitching of Price.

THE NEWS

Drs. N. J. Miller and W. G. Brock Elected to Executive Board

The polls for election of Executive Board members from District VI (Arizona, California, Canal Zone and Central America, Colorado, Mexico, Nevada, New Mexico and Utah) and District VIII (Arkansas, Kansas, Louisiana, Missouri, Oklahoma and Texas) closed on Aug. 12, 1946. The winning nominees (see the June JOURNAL, p. 80) were, in District VI, Dr. N. J. Miller of Eaton, Colo., and Dr. W. G. Brock of Dallas, Texas, in District VIII. Both men are well-known practitioners and both have been prominent in local, state, and national association work for many years. They were elected for regular five-year terms ending in 1951.

The vote in both districts was large. Drs. W. A. Young and E. R. Maschgan of Chicago served as tellers to count the ballots on August 13 and certified the foregoing results.

Registration at Boston Session

As we go to press, a minimum registration of 1,800 at Boston for the 83rd annual meeting is indicated; this figure is based on hotel reservations to date (August 15).

On page 180 of this issue, brief "highlights" from the papers presented at the Boston Session are published. Most of the papers will be published in full in the coming issues of the JOURNAL, beginning with October. The proceedings of the meeting will also appear in the October issue. The committee reports will appear in the November issue, as usual.

Third Report on Research Fund Drive

On the following page will be found a report, as of Aug. 10, 1946, of the individual contributions, by geographical sub-divisions, to the Research Fund. Two states have now exceeded their quotas, Colorado and Rhode Island, the latter by nearly 150 per cent. Other leaders, with respect to percentage of quotas attained, are: Missouri, 80 per cent; the District of Columbia and New Mexico, 75 per cent each; Oklahoma, 58.2 per cent; California 54.2 per cent; Utah and Virginia, 46.6 per cent and 46.1 per cent, respectively; and Maine, 45.6 per cent.

The results given in this report represent an increase of 736 in the number of contributors and $12,293.67 since the last report which was made as of June 10, 1946.

APPLICATIONS

The listing of applicants conforms to the requirements of the administrative by-laws—Article X, Section 2.

First Listing

ANGEL A., JUAN
Av. Yucatan 10 Bis., Mexico, D. F.
D.V.M., Escuela Nacional de Medicina Veterinaria, Universidad Nacional de Mexico, 1929.
Vouchers: F. Camargo N. and A. Tellez G.

BALLIET, E. J.
1950 Lincoln Ave., Northampton, Pa.
V.M.D., University of Pennsylvania, 1914.
Vouchers: J. B. Reidy and C. P. Bishop.

BIGELOW, WILLIAM L.
4111 El Camino Real, Palo Alto, Calif.
D.V.M., Texas A. & M. College, 1945.
Vouchers: G. P. Bertetta and J. W. Hylton.

BURKE, WILLIAM Z.
Rt. 8, Box 173, San Antonio, Texas.
D.V.M., Texas A. & M. College, 1934.
Vouchers: W. C. Dye and C. W. Neal.

DEPPA, W. A.
326 N. Bridge St., Grand Ledge, Mich.
D.V.M., Michigan State College, 1935.
Vouchers: C. E. Kokx and E. K. Sales.

DURIGG, JOHN R.
9357 E. Colfax Ave., Denver 8, Colo.
D.V.M., Ohio State University, 1932.
Vouchers: J. H. Bouton and R. M. Gow.

ELDARDIRY, AHMAD HAMID
Box 206, East Lansing, Mich.
B.V.Sc., Foad 1st University, Cairo, Egypt, 1938.
Vouchers: C. H. Cunningham and J. P. Newman.

FINAMOR, DESIDERIO
Rua Vigario Jose Inacio n 622, Porto Alegre, Rio Grande de Sul, Brazil.
D.V.M., Escola de Argonomia e Veterinaria, da Universidade de Porto Alegre, 1926.
Vouchers: S. Torres and J. G. Hardenbergh.

HARRISON, EARL H.
507 Benicia Rd., Vallejo, Calif.
D.V.M., Kansas State College, 1937.
Vouchers: J. H. Kintner and W. S. Bentham.

KEITH, H. BROOKS
1015 N. Meridian, Puyallup, Wash.
D.V.M., Iowa State College, 1935.
Vouchers: J. C. Exline and M. O. Barnes.

(*Continued on page* 231)

Third Report on Contributions to AVMA Research Fund
Geographical Breakdown as of August 10, 1946

State	Total Number Veterinarians (1945 figures)	Quota*	Number of Contributions (to date)	Total Amount Contributed (to date)	Per Cent of quota (to date)
Alabama	125	$ 1,250	14	$ 170.00	13.6
Arizona	42	420	7	100.00	23.8
Arkansas	59	590	11	101.17	17.1
California	1,044	10,440	294	5,660.00	54.2
Colorado	177	1,770	86	2,055.00	116.1
Connecticut	136	1,360	25	480.00	35.3
Delaware	32	320	3	30.00	9.4
District of Columbia	58	580	15	435.00	75.0
Florida	142	1,420	20	595.00	41.9
Georgia	147	1,470	28	460.00	31.3
Idaho	71	710	24	275.00	38.7
Illinois	1,224	12,240	146	3,360.00	27.5
Indiana	585	5,850	47	642.00	11.0
Iowa	865	8,650	117	1,922.31	22.2
Kansas	404	4,040	67	1,600.00	39.6
Kentucky	137	1,370	15	175.00	12.8
Louisiana	85	850	10	215.00	25.3
Maine	68	680	15	310.00	45.6
Maryland	165	1,650	27	500.00	30.3
Massachusetts	206	2,060	50	850.00	41.2
Michigan	550	5,500	84	1,625.00	29.6
Minnesota	403	4,030	71	1,018.50	25.2
Mississippi	99	990	8	145.00	14.6
Missouri	356	3,560	114	2,865.00	80.5
Montana	63	630	21	205.00	32.5
Nebraska	281	2,810	58	1,018.75	36.2
Nevada	27	270	3	75.00	27.7
New Hampshire	35	350	6	90.00	25.7
New Jersey	301	3,010	44	872.50	29.0
New Mexico	29	290	11	217.50	75.0
New York	980	9,800	134	2,855.00	29.1
North Carolina	135	1,350	19	300.00	22.2
North Dakota	73	730	10	245.00	33.5
Ohio	740	7,400	133	2,445.00	33.0
Oklahoma	110	1,100	44	640.00	58.2
Oregon	175	1,750	30	555.00	31.7
Pennsylvania	656	6,560	81	1,517.00	23.1
Rhode Island	25	250	13	620.00	248.0
South Carolina	80	800	10	215.00	27.0
South Dakota	118	1,180	14	220.00	18.6
Tennessee	93	930	17	205.00	22.0
Texas	421	4,210	62	940.75	22.3
Utah	45	450	20	210.00	46.6
Vermont	96	960	19	285.00	30.0
Virginia	130	1,300	34	600.00	46.1
Washington	226	2,260	42	746.00	33.0
West Virginia	65	650	5	65.00	10.0
Wisconsin	502	5,020	77	1,175.00	23.4
Wyoming	38	380	11	130.00	34.1
Hawaii	....	.....	15	370.00	...
Canada	....	.....	7	80.25	...
Totals	12,624	$126,240*	2,238	$ 42,486.73	33.6*

*Based on an average contribution of $10.00 per veterinarian. However, the total amount contributed to date is 42.4 per cent of the original goal of $100,000.

LAWRENCE, THOMAS H.
205 Broad St., Red Bank, N. J.
D.V.M., Cornell University, 1938.
Vouchers: J. A. S. Millar and C. C. Combs.

McDONALD, RUSSEL J.
Box 776, Woodstock, Ont., Can.
D.V.M., Ontario Veterinary College, 1945.
Vouchers: H. S. MacDonald and J. E. Johnson.

PITTMAN, ARTHUR B.
4961 Dodge St., Omaha, Neb.
D.V.M., Iowa State College, 1941.
Vouchers: P. L. Matthews and A. C. Drach.

RACHED, SHAMSELDIN HALFAWI
P. O. Box 503, East Lansing, Mich.
B.V.Sc., Foad 1st University, Cairo, Egypt, 1937.
Vouchers: C. H. Cunningham and J. P. Newman.

THOMPSON, S. N.
Box 896, Penticton, B. C., Can.
D.V.M., Ontario Veterinary College, 1936.
Vouchers: F. A. Humphreys and W. L. Parkhill.

WEINBERG, CHARLES W.
163 Richmond Ave., Buffalo, N. Y.
D.V.M., Michigan State College, 1939.
Vouchers: R. Grossman and S. Notarius.

WICKWARE, ALBERT B.
1031 Carling Ave., Ottawa, Ont., Can.
B.V.Sc., Ontario Veterinary College, 1908.
Vouchers: M. Barker and O. Hall.

Second Listing

Anderson, Edmund N., 67 Marion St., Norwood, Man., Can.

Astle, Neville L., 715 W. Lincoln, Blackwell, Okla.

Boast, Robert D., 149 Garfield St., Winnipeg, Man., Can.

Burke, John W., 519 N. Main St., Dayton 5, Ohio.

Couch, J. B., AAF Reg. & Conv. Hosp., AAFMTC, San Antonio, Texas.

Coulter, I. P., Cuthbert, Ga.

Cunha, Raymundo Gurgel c/o Brazilian Embassy, 3007 Whitehaven St., N. W., Washington, D. C.

Dick, John M., 234 Sagamore Rd., Havertown, Pa.

Eldredge, Philip G., 735 Warm Springs Ave., Boise, Idaho.

Espinosa, Jorge A., P. O. Box 206 F, Mexico D. F.

Fernandez, Eulalio, Casilla 5539, Santiago, Chile, S. A.

Flores, Carlos H., Casilla 9719, Santiago, Chile, S. A.

Hill, Robert S., Grove Hill, Ala.

Hotchkis, Thomas F., 44 Rupert St., Amherst, N. S., Can.

Houston, James E., Ste. 1 Heather Apts., Winnipeg, Man., Can.

Huster, Frank J., 2722 S. 16 St., Philadelphia, Pa.

Kilpatrick, M. E., 631 W. Main St., Tipp City, Ohio.

Menghetti, Victor A., 3rd & Highland Ave., Media, Pa.

Mims, Joseph B., Cleburne, Texas.

Sanders, Thomas E., R.R. No. 3, Oblong, Ill.

Watson, Harold L., 159 Main St., Montpelier, Vt.

Whipple, Ray O., 527 N. 10th St., Lebanon, Pa.

1946 Graduate Applicants

First Listing

The following are graduates who have recently received their veterinary degrees and who have applied for AVMA membership under the provision granted in the Administrative By-Laws to members in good standing of junior chapters. Applications from this year's senior classes not received in time for listing this month will appear in later issues. An asterisk (*) after the name of a school indicates that all of this year's graduates have made application for membership.

Colorado A. & M. College

ARBURUA, JOHN M., D.V.M.
2000 Monterey Blvd., San Francisco, Calif.
Vouchers: J. Farquharson and H. W. Johnson.

Iowa State College

CLARK, CHARLES L., D.V.M.
LeClaire, Iowa.
Vouchers: M. A. Emmerson and J. D. Reardon.

DAHLKE, NORBERT A., D.V.M.
R. 1, Princeton, Wis.
Vouchers: M. W. Sloss and H. J. O'Connell.

ECKSTEIN, ANTON J., D.V.M.
R.R. No. 5, New Ulm, Minn.
Vouchers: I. A. Merchant and C. H. Covault.

Texas A. & M. College

PFRIMMER, LEO H., D.V.M.
Franklinton, La.
Vouchers: P. W. Burns and W. T. Oglesby.

Second Listing

Colorado A. & M. College*

Adams, Ora R., D.V.M., 500 W. Laurel, Fort Collins, Colo.

Bracken, Frank K., D.V.M., 119—10th Ave., N., Twin Falls, Idaho.

Braley, Edward L. Jr., D.V.M., 380 Wadsworth St., Lakewood, Colo.

Burleigh, Glenn B., D.V.M., 4413 N. E. 85th Ave., Portland 13, Ore.

Christensen, John F., D.V.M., Dept. of Physiology, Colorado A. & M. College, Fort Collins, Colo.

Curtis, Roger W., D.V.M., 73 State Ave., Alamosa, Colo.

Detlefsen, Harlan E., D.V.M., Ferndale, Calif.

Fremming, Benjamin D., D.V.M., 6003 Morningside Ave., Sioux City, Iowa.

Hawkins, William S., D.V.M., Box 57, Yampa, Colo.
Herman, Robert, D.V.M., 447½ N. Van Ness Ave., Los Angeles 4, Calif.
Hill, Harold J., D.V.M., R.F.D. Rt. 1, Hudson, N. H.
Huntington, Lowell L., D.V.M., Wallace, Neb.
Jackson, Raymond S., D.V.M., 1319 W. Mulberry, Fort Collins, Colo.
Jourdan, Russell H., D.V.M., 531 S. 52 St., Omaha, Neb.
Judish, Frank J., D.V.M., 5495 N. Federal Blvd., Denver, Colo.
Knaus, Dallas H., D.V.M., Rt. 2, Longmont, Colo.
Linfoot, Janet M., D.V.M., R.R. 2, Box 3211-P, Redwood City, Calif.
Linfoot, William R., D.V.M., R.R. 2, Box 3211-P, Redwood City, Calif.
Lipe, William I., D.V.M., 101 Kenwood Dr., Pueblo, Colo.
McConnell, Roy Jr., D.V.M., Monte Vista, Colo.
Meyers, Harold F., D.V.M., 326 Santa Cruz Ave., Modesto, Calif.
Moreland, George W., D.V.M., Box 165, Plains, Texas.
Norton, E. S., D.V.M., c/o Veterinary Hospital, Colorado A. & M. College, Fort Collins, Colo.
Pavetti, Louis P., D.V.M., 2261 N. Linden Ave., Trinidad, Colo.
Peterson, Kermit J., D.V.M., 628 S. Mason, Fort Collins, Colo.
Poulson, Robert L., D.V.M., 253 S. 6th E., Salt Lake City, Utah.
Raisbeck, Merl E., D.V.M., R.R. 1, Box 234, c/o C. A. Jeffers, Loveland, Colo.
Shinabargar, Jean D., D.V.M., 260 Eaton Dr., Pasadena, Calif.
Smith, Max B., D.V.M., 306 W. Laurel, Fort Collins, Colo.
Strandberg, Hilding M., D.V.M., 163 Cook St., San Francisco, Calif.
Thomas, Clyde L., D.V.M., Rexburg, Idaho.
Thomas, James A., D.V.M., R.R. 2, Spanish Fork, Utah.
Thornburg, Roy M., D.V.M., P. O. Box 576, Burley, Idaho.

Cornell University*

Bardwell, Robert E., D.V.M., Wolf Run Farms, R.R. No. 2, Lexington, Ky.
Batchelder, Roger W., D.V.M., 410 Elmwood Ave., Ithaca, N. Y.
Brightenback, George E., D.V.M., Windsor, Vt.
Brown, Philip R., D.V.M., R.F.D. No. 1, Vassalboro, Maine.
Cohen, Hunter, D.V.M., 89 Forest Park Ave., Springfield, Mass.
Delano, Ray O. Jr., D.V.M., R.F.D., Duxbury, Mass.
Denk, Adolph J., D.V.M., 11 S. William St., Pearl River, N. Y.
Doremus, Henry M., D.V.M., Jacksonville Rd., Towaco, N. J.
Dorn, Saul J., D.V.M., 1023 E. State St., Ithaca, N. Y.
Field, Robert A., D.V.M., 317 Elmwood Ave., Ithaca, N. Y.
Forsyth, Rodney A., D.V.M., Oakfield, N. Y.
Fountain, Edmund L., D.V.M., 349 Bleecker St., Gloversville, N. Y.
Haberman, Julius J., D.V.M., 409 Dryden Rd., Ithaca, N. Y.
Hoffmire, James H., D.V.M., Trumansburg, N. Y.
Icken, Donald F., D.V.M., Western Highway, Blauvelt, N. Y.
Irving, Elwyn L., D.V.M., Boise Rd., East Aurora, N. Y.
Jenkins, Charles M., D.V.M., New Paltz, N. Y.
Kaplan, William, D.V.M., 184 Monroe St., New York, N. Y.
Kirk, Robert W., D.V.M., 8 Woodmere Rd., Stamford, Conn.
Love, Thomas J., D.V.M., Watkins Glen, N. Y.
Lynch, Donald R., D.V.M., Centenial Ave., Brockport, N. Y.
McAvoy, Byron G., D.V.M., 526 Stewart Ave., Ithaca, N. Y.
McCann, John W., D.V.M., 523 Seneca St., Oneida, N. Y.
Meade, Janet A., D.V.M., 70 Greendale Rd., Scarsdale, N. Y.
Nusbaum, Sidney R., D.V.M., 1665 Oneida St., Utica, N. Y.
O'Brien, Robert W., D.V.M., Constableville, N. Y.
Ohlhorst, Roy H., D.V.M., 136 Boulevard, Scarsdale, N. Y.
Prier, James E., D.V.M., 23 Berwin Lane, Staten Island 10, N. Y.
Rubin, Gerard J., D.V.M., 407 Eddy St., Ithaca, N. Y.
Ryan, William G., D.V.M., R.D. No. 6, Auburn, N. Y.
Salk, Herman M., D.V.M., Hunter, N. Y.
Salk, Sylvia B., D.V.M., Hunter, N. Y.
Sams, Jeanette, D.V.M., 2349 Saratoga Dr., Louisville, Ky.
Schenholm, Carl L., D.V.M., Westport, N. Y.
Schirmer, Robert G., D.V.M., New York State Veterinary College, Ithaca, N. Y.
Steele, John R., D.V.M., Schodack Landing, N. Y.
Tanneberger, Frank J., D.V.M., 156-07 Sanford Ave., Flushing, L. I., N. Y.

Iowa State College

Barnes, Lawrence E., D.V.M., 224 Ash Ave., Ames, Iowa.
Bowie, Morraine C., D.V.M., Lake City, Iowa.
Clifford, William R., D.V.M., Guthrie Center, Iowa.
Collins, Arthur M., D.V.M., 5959 West End Ave., Chicago 44, Ill.
Herrick, John B., D.V.M., 1219 Lincoln Way, Ames, Iowa.
Kaster, Martin L., D.V.M., Cuba City, Wis.
Kerr, John E. Jr., D.V.M., Box 123, Tecumseh, Okla.

Lowther, Birk C., D.V.M., Clarence, Iowa.
Nelson, John M., D.V.M., 330 Sycamore Ave., DeKalb, Ill.
Ormiston, Howard L., D.V.M., Malcolm, Iowa.
Powers, Robert T., D.V.M., 860 N. Bennett St., Geneva, Ill.
Ramsey, Frank K., D.V.M., Veterinary Anatomy, Iowa State College, Ames, Iowa.
Schrafel, C. Edwin, D.V.M., Highway No. 16 W., R.R. 3, Austin, Minn.
Shindel, George P., D.V.M., 518 Jackson, Charleston, Ill.
Spurrell, Francis A., D.V.M., Dept. of Veterinary Sc., University of Wisconsin, Madison, Wis.
Thompson, Samuel W., D.V.M., 250½ Campus, Ames, Iowa.

Texas A. & M. College

Alldredge, Bud E., D.V.M., 1000 Pine St., Sweetwater, Texas.
Brown, Charles D., D.V.M., 1209 Bowie, Amarillo, Texas.
Nevin, Robert B., D.V.M., 1104 W. 6th St., Austin, Texas.
Tumlinson, William J., D.V.M., Box 885, Raymondville, Texas.

U. S. GOVERNMENT

National Committee on Newcastle Disease.—Out of the two-day conference at Washington, May 2 and 3, 1946, a National Committee on Newcastle Disease was developed. Included among its members are: Drs. T. C. Byerly, H. W. Schoening, and B. T. Simms of the Bureau of Animal Industry. State livestock sanitary officials are: Drs. C. P. Bishop, Harrisburg Pa.; C. E. Fidler, Springfield, Ill.; and Wm. Moore, Raleigh, N. C. State experiment station workers are: Drs. F. R. Beaudette, New Brunswick, N. J.; C. A. Brandly, Madison, Wis.; and E. L. Jungherr, Storrs, Conn. Other members of the committee, and the segments of the poultry industry that each represents, are as follows: Mr. Herman Demme, Sewell, N. J., poultry producer; Mr. Geo. B. Treadwell, Spencer, Mass., poultry breeder; Mr. H. F. Williamson, Salisbury, Md., broiler producer; Mr. M. C. Small, Mt. Morris, Ill., turkey producer; Mr. D. M. Turnbull, Kansas City, Mo., and Mr. Eric Nissen, Petaluma, Calif., hatcherymen; Dr. Cliff D. Carpenter, Chicago, Ill., processor; and Dr. O. B. Kent, Chicago, feed manufacturer.

This committee has met and issued the following recommendations: 1) that the livestock sanitary official in each state suspend all live poultry shows; 2) that local quarantine, sanitation, vaccination, and an aggressive program for the diagnosis and reporting of Newcastle disease be applied in all areas; 3) that no *general* regulations restricting the interstate movement of poultry products for the control of Newcastle disease be promulgated at this time; 4) that *local* or *area* regulations and measures of control be based on the declaration and certification of the shipper that, to the best of his knowledge, baby chicks, breeding stock, and hatching eggs did not originate in a flock showing evidence of infection with, nor were recently exposed to, Newcastle disease; 5) that the BAI issue at once an outline setting forth the minimum requirements in personnel, facilities, and funds required in each state for the diagnosis of Newcastle disease; 6) that regional schools for the training of personnel in the diagnosis of Newcastle disease be established by coöperative action of the states with the BAI, and that qualified personnel of the Bureau and all state and other institutions be asked to assist in conducting these schools; and 7) that the poultry industry coöperate with their livestock sanitary officials in the establishment of adequate diagnostic facilities within each state and in the reporting of subsequent outbreaks of Newcastle disease.

Dr. Cliff D. Carpenter is chairman of this committee, and Dr. T. C. Byerly is secretary.

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Streptomycin Allocation.—Preliminary plans for limited commercial distribution of streptomycin have been outlined by the Civilian Production Administration and will follow the procedure used with penicillin.

Streptomycin will be issued to selected hospitals throughout the country, and they will act as depots for their areas. The amounts of streptomycin to be distributed and the particular hospitals have not been determined as yet.

The release does not mention availability of streptomycin for veterinary use, but such use would necessarily be highly restricted because of the scarcity and cost of the product. Dr. Chester S. Keefer, who has charge of distribution, points out that the treatment of an individual case of human tuberculosis for a minimum period of three months costs about $4,000 for the drug alone.

• • •

Livestock Quarantine Station.—The U. S. Congress has approved, and the President has signed, legislation authorizing the establishment of an animal quarantine station on Swan Island, 150 miles off the coast of Honduras in the Caribbean Sea. While operation of this station will not remove any existing quarantine requirements, it will make it easier for imported livestock to conform to these regulations; furthermore, it will safeguard the health of American herds by holding away from contact with diseased animals the livestock which is imported.

Meat Inspection Prosecutions.—Dr. A. R. Miller, chief of the Meat Inspection Division, reports that during the fiscal year of July 1, 1945, to June 30, 1946, the Division successfully prosecuted more than 25 violators. The

Dr. A. H. Frank, Bureau of Animal Industry, injecting tuberculin between the layers of skin at the caudal fold.

penalties assessed totalled fines of more than $3,200 and sentences of thirty-eight months.

• • •

Improved Tuberculin.—The new tuberculin which has been developed by the U. S. Department of Agriculture is produced on a synthetic medium and is purer and more potent than that originally produced by Robert Koch in Germany. The old tuberculin was produced by growing tubercle bacilli on a meat infusion broth, and the final product still contained many of the animal products, whereas, the tuberculin now being used consists almost entirely of products derived from tubercle bacilli. Even the new product, however, must be kept completely sterile in order to avoid questionable or unfavorable reactions following its use.

AMONG THE STATES

Arkansas

Death from Tularemia.—The danger of handling the carcasses of wild rabbits was brought home to the people of Harrison when the second recent death from tularemia occurred in that region.

• • •

Fight against Insect Pests.—Through the influence of Senator Fulbright, State Veterinarian Campbell has been allotted 11 additional power-driven sprayers from the War Department to extend the campaign against insect pests of livestock. The tanks have a capacity of 500 gallons. Twenty-one spraying units will be operating by fall.

• • •

Soil Conservation, Livestock, and Electricity.—"I shall soon have electric light and power on my farm," writes Dr. Frank Hurlbut, retired BAI veterinarian of Yellville who thoughtfully supplies news about the "goings on" in Arkansas. The Doctor points to the livestock and dairy development carried along by the expansion of the Arkansas Power and Light Company, the extension service of the state university coöperating in federal soil conservation and animal industry. The state needs the land, the land needs livestock, the power company needs the customers, and everyone is happy, is the way it all sums up.

California

Work of Dr. H. M. O'Rear Recognized.—The American College of Chest Physicians recognized the work of Dr. H. M. O'Rear and of veterinarians in general by placing him on the program of their twelfth annual meeting held at San Francisco, June 27 to 30, 1946. The subject assigned to him was "Hazards of Bovine Tuberculosis as a Matter of Public Health Significance, and Potential Human Lung Infections With the Bovine Tubercle Bacillus." Dr. O'Rear is a BAI inspector in charge for California, with offices at Sacramento.

• • •

Equine Prizes of the War.—The Pomona Quartermaster Depot (Remount Division), formerly the Kellog Arabian Horse Ranch, has received a consignment of 54 horses requisitioned or captured from Nazi Wehrmacht by the American Army during the invasion of Germany. They are purebred Arabians, Anglo-Arabs, and Lippizzaners shipped from abroad to the Aleshire Quartermaster Depot at Front Royal, Va. They represent the finest bloodline of longtime selective breeding. The Lippizaners date back to the sixteenth century.

• • •

New Officers.—At the annual meeting at Santa Barbara, June 17 to 19, 1946, the following officers were elected: Dr. E. G. LeDonne, Oakland, *president;* Dr. Chas. H. Reid, Hollywood, *first vice-president;* Dr. O. A. Longley, San Francisco, *treasurer;* and Dr. F. H. White, San Rafael, *secretary.*

s/F. P. WILCOX, *Secretary.*

District of Columbia

Fifteenth Anniversary.—The Washington Institute of Medicine, a membership association devoted to medical bibliographic research, was founded in Washington, in 1931. It issues a series of *Quarterly Review* publications, each covering a specialized field, which provide authoritative abstracts and thoughtful commentaries on all noteworthy advances published in the medical literature of the entire world.

Florida

Personal.—Drs. H. C. Nichols (OSU '17) and E. F. Thomas (GA '26) have built a new animal hospital on the north side of Ocala, with facilities so complete that it will be able to render service in every field of veterinary medicine. Drs. W. R. Brawner (API '44) and W. W. Matthews (MSC '40), the latter recently released from the Army Veterinary Corps, are associates of Drs. Nichols and Thomas.

s/V. L. BRUNS, *Secretary.*

• • •

Moves to Gainesville.—Dr. Glenn Van Ness (KSC '40) has accepted a position as associate poultry pathologist, Florida Agricultural Experiment Station, Gainesville, where he will be associated with Dr. M. W. Emmel (ISC '19) in the direction of an expanded program of poultry disease research, which is made possible by increased legislative appropriation.

Dr. Van Ness was in charge of the Veterinary and Bacteriology Department, University of Arkansas, Fayetteville, until he assumed his new duties on July 1, 1946.

s/V. L. BRUNS, *Secretary.*

Georgia

Coastal Plain Short Course

Participating in the program of the second annual short course for veterinarians at the Georgia Coastal Plain Experiment Station, Tifton, on July 9 and 10, 1946, were (left to right): Drs. A. H. Groth, director, Animal Disease Research Laboratory, Auburn, Ala.; W. L. Boyd, chief, Division of Veterinary Medicine, University of Minnesota, St. Paul, Minn.; H. E. Pinkerton, pathologist, Fort Dodge Laboratories, Fort Dodge, Iowa; R. C. Klussendorf, assistant executive secretary, AVMA, Chicago, Ill.; and D. E. Bartlett, Zoölogical Division, Beltsville Research Center, Beltsville, Md.

Idaho

Election Results.—At the annual meeting of the Idaho Veterinary Medical Association, held at Boise on July 1 and 2, the following officers were elected to serve for the coming year: Dr. M. Grootes, Twin Falls, *president;* Dr. Don A. Copple, Boise, *vice-president;* and Dr. Arthur P. Schneider, Boise, *secretary-treasurer.*

s/P. H. GRAVES, *Secretary.*

Illinois

Proposed Change in Veterinary Service.—The plan to fuse the office of chief veterinarian with that of superintendent of animal industry is likely to be passed by the next legislature as an improvement over the present setup. Until the appointment of Chief Veterinarian Fidler to superintendent, that office has been filled by laymen regardless of experience in the handling of the state's livestock sanitary work and without the technical knowledge the nation expects of an important livestock commonwealth like Illinois, lying as it does in the cross-road of the country's animal industry. The danger in the new law would be in not specifying that the incumbent be a veterinarian and thus lowering the office below the acceptable standard for such offices in the United States. The Illinois State Veterinary Medical Association is, therefore, urging the livestock industry and the veterinary profession to guard the honor of their state in this important respect.

• • •

Farm Horse Paragon.—Ouster Volo, farmer-owned, 15-year-farm horse won the mile trot at Santa Anita, swank race track of southern California, after helping to plant 120 acres of corn, according to the *Western Livestock Journal.* The owner, trainer, and driver is Guy Cleveland, of Carmi, who purchased the horse at a sale for $55 in 1938.

• • •

Use Sodium Fluoride Cautiously.—Dr. C. C. Morrill, University of Illinois College of Veterinary Medicine, Urbana, warns farmers to be extremely careful in using sodium fluoride to treat worm-infested swine. The warning is issued through the Extension Service, College of Agriculture, and stresses the fact that sodium fluoride is highly toxic. It should be used only after a proper diagnosis of parasitism has been made by a veterinarian.

• • •

Feed Supplies Are Critically Short.—The Nutrition Council of the American Feed Manufacturers Association, Chicago, has issued a statement outlining ways to make these short supplies do the most good.

1) Making full use of pasture may save up to one-third of the feed required by growing chickens, turkeys, and pigs.

2) Dairy cows on especially good pasture need little grain, while the poor producers and shy breeders should have none.

3) Culling inefficient and diseased animal units will utilize the available feed on those that can use it to best advantage.

4) Do not feed intestinal parasites, avoid wastage by animals, furnish an abundance of salt and fresh water, and improve management procedures to make the greatest use of home-grown roughage and grain.

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Pari-Mutuel Tax for Soldiers' Bonus.—If the horse did not engage in as many mortal combats as the machines of the land and the air during the war nor do all of the plowing, he's in there pitching for the soldiers' bonus to the tune of $17,000,000 to be taken from the pari-mutuel bets under an act of the legislature increasing the "take" from 2 to 8 per cent. Saratoga Springs and New York City (*The Blood Horse*, June 29, 1946) collect 5 per cent of that kind of money to apply on municipal financing, Kentucky is about to follow suit, and movements are on foot to tax off-the-tracks betting—the pool rooms. Horsedom is protesting the collection of this painless, easy-to-collect tax. It reduces the net profit of the race tracks and threatens to take on the complexion of a gigantic national lottery. Meanwhile, the nongambling element of society is happy.

Indiana

Death of a Hero.—By all odds, the greatest heroes of modern times are the 23 soldiers who volunteered to give up their lives to aid Walter Reed to carry out his historic experiment on the cause of yellow fever in Cuba during 1900-1901. One of the 23 was Pfc. John Kissinger, of Indiana, whose death in Clearwater, Fla., July 14, gets but four lines in a prominent medical journal. Those who remember how Yellow Jack, alias yellow fever, once had much of the civilized world scared stiff are sorry that heroes can be so soon forgotten.

The brilliant and far-reaching dénouement is written indelibly on the pages of medical history, but the soldiers who made that end possible are practically forgotten men, notwithstanding that in the forty-five years since they permitted themselves to be inoculated with yellow fever to prove Major Reed's theory, the lives of uncountable millions have been saved.

Solving the yellow fever mystery of centuries in 1901 also recalls the hunch on insect vectors received seven years before from the triumvirate — Smith-Cooper-Kilbourne — who paved the way for the conquest of specific insect-borne infections.

This piece is inserted here because Indiana ought to be proud of John Kissinger.

Iowa

Marion Horse Show.—The third annual Marion Horse Show held at the Shover's Oaks Farm July 17 and 18 drew 156 entries and 90 owners from three states. The Marion show is an enterprise of Dr. R. J. Lenz, energetic Linn County veterinarian and breeder of Hackney Ponies, aristocrats of the show ring.

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Imposter.—Authorities warn that a man with more than a superficial knowledge of veterinary work, lingo, and affairs has been operating in Iowa, Illinois, South Dakota, Colorado, and Wyoming. He is 6 ft. 3 in. tall, weighs 170 lb., has blond hair and blue eyes, and specializes in cashing checks which are returned marked "No Account."

The man's name is J. H. Levsen, and he is a native of Maquoketa. He usually writes checks on a Marion, Iowa, bank and has signed such names as: Carson, V. M.; Levson, V. M.; Carsens, V. M.; Carsons, V. M.; and Larsen, V. M.

Kansas

Larned Entertains District II.—Drs. A. M. Coddington, E. C. Baker, and Byron Quinby were hosts when the members of District II met at Larned on June 6. Dr. Allen Brite, Wichita, was the principal speaker of the evening, outlining the discovery of hog cholera virus by Drs. Dorset and Niles in 1903, the field tests which proved the theory, and the development of crystal-violet and tissue vaccines by attenuation.

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Dean Dykstra at District I.—Dr. and Mrs. J. H. Indorf entertained the veterinarians of District I on June 23, with the able assistance of other veterinarians from the territory around St. Francis. Dean R. R. Dykstra, of Kansas State College, led a discussion on cattle diseases which covered lymphatic leucemia, mastitis, pyelonephritis, necrophorus infections, shipping fever, indigestion in the bovine animal, stomach worms in farm animals, and brucellosis.

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District IV Meets at Wichita.—Dr. Frank Breed, of Norden Laboratories, Lincoln, Neb., was the speaker when 53 members of District IV met at the home of Dr. J. A. Bogue on June 8. The subject for the evening was brucellosis. Members attending entered into the program covering this problem in human beings, swine, cattle, and other farm animals, from such angles as testing, control and establishment of Brucella-free herds, vaccination procedures and results, and other related phases of the problem.

Bulletin, Kansas Veterinary Medical Association

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Personal.—Dr. Jefferson Robinson (KCVC '15), who is widely known as a BAI meat inspector, has recently retired from the Bureau and has returned to his "first love", general practice, at Omega, Ga.

Louisiana

Can Dairymen Stay in Business?—This question is asked in *Extension Press Service*, Louisiana State University, Baton Rouge, in the issue of July 15. Because demise of the OPA meant the end of subsidy payments, the dairymen find themselves in a critical position. The consumer was never advised that he was paying more for his milk than appeared on the milk bill, so that the difficult job of explaining a marked and an abrupt price rise falls on the producer at a time when such action makes him look like a profiteer taking advantage of the passing of price controls. Although feed prices had advanced almost 100 per cent since ceilings were established in 1942, while labor and equipment costs were more than doubled, the retail price of milk was permitted to rise only 1 cent per quart, the remainder of the cost being paid to the producer as a subsidy—to which the consumer neither paid attention nor tried to understand.

The dairyman will make the adjustments necessary to stay in business, but it will require patience, caution, and economy.

Michigan

Dr. C. C. Stevens Retires.—After serving as city veterinarian at Port Huron while the bacteria count of milk was reduced from an average of 6,000,000 to less than 30,000 per cubic centimeter, Dr. C. C. Stevens (ONT '02) has resigned the position, which now also includes meat inspection. Locating in Port Huron in March, 1914, Dr. Stevens began work as a dairy inspector in December, 1924, and has discharged the increasing duties of the position since that time.

Minnesota

Dr. W. H. Feldman Recognized.—The outstanding work which has been done by Dr. W. H. Feldman, Mayo Foundation, Rochester, was recognized when he was invited to deliver the Harben Lectures sponsored annually by London's Royal Institute of Public Health and Hygiene.

Dr. Feldman is the first veterinarian ever invited to deliver this series of lectures, and one of very few Americans to be so recognized. His subject for the three lectures will be "The Chemotherapy of Tuberculosis", and he will stress the use of streptomycin and other antibiotic agents in controlling this disease.

Mrs. Feldman will accompany him on an extended tour of Europe which will include speaking appearances before the British Tuberculosis Association at Oxford, the Pasteur Institute at Paris, the University of Copenhagen in Denmark, the Tuberculosis Association of Sweden at Stockholm, and before an assemblage of surgeons at Lisbon, Portugal.

Missouri

Kansas City Association.—Anaplasmosis was the feature subject presented at the July meeting of the KCVMA. The guest speaker was Dr. Herman Farley, of Oklahoma A. & M. College, director of the Veterinary Research Institute for Anaplasmosis. Dr. Farley reported that the incidence of the disease is increasing in that state. The newer methods of diagnosis and treatment were discussed. The members were urged to aid the association to complete its survey on bovine mastitis: its actual prevalence, treatment and recoveries.

s/GAIL B. SMITH, *Secretary*.

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Purina Staff and Programs Grow.—Mr. H. L. Wilcke, Ph. D., who has been head of the poultry husbandry department at Iowa State College, Ames, has accepted the position of manager of the general poultry and hatchery department of the Ralston Purina Co. in St. Louis. From March, 1943, to March, 1946, he served as nutrition officer for the U. S. Army and directed surveys of the food consumption and nutrition status of civilians in Germany and Austria. He also was an American representative in the Four-Power Conferences setting up the issue for Vienna. During eighteen months of overseas service, Dr. Wilcke was stationed in England, France, Belgium, Germany, and Austria. He also taught poultry husbandry and turkey management for a time at the Biarritz American University in Biarritz, France.

Dr. H. L. Wilcke

In line with the policy of preparing and disseminating information on problems of economic interest, the following items have been released by the Ralston Purina Co.: residual action of DDT, DDT in horn fly control, controlling flies in farm buildings with DDT, and blue backs in turkeys.

DDT Spray at Kansas City Yards.—Mr. Ray L. Cuff, southwestern regional manager of the National Live Stock Loss Prevention Board, reports that a spray chamber is now available to buyers of feeder cattle coming from the Kansas City Stock Yards. At a cost of 15 cents per head, the cattle will be sprayed from the top and bottom, with some 600 nozzles to insure that the 40 head occupying the chamber will be thoroughly soaked.

On the basis of extensive observations and trials last year, it is estimated that cattle sprayed four times during the summer grazing season will gain an extra 50 lb. each. Estimating that half the cattle in Kansas and Oklahoma are being protected with DDT spraying this year, he concludes that some 122 million lb. more of live weight will be marketed, and about 53.5 million lb. more of beef will be placed in the butcher shops and on the dining tables. All of this will be done without the outlay of one additional pound of grain, and with a very nominal cost for the DDT and the labor of applying it.

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Saint Louis District.—The July meeting of the St. Louis District Veterinary Medical Association was held on the twelfth instead of on the fifth of the month as originally announced. In addition to the discussion of "Heart Worm Infection in Dogs", by Dr. V. J. Novy, of Belleville, Ill., Dr. W. A. Winslade, also of Belleville, talked about some interesting cases encountered in coal mine practice.

s/C. W DARBY, *Secretary.*

New Jersey

Majority Votes to Attend AVMA Sessions.—A majority of the members of the Veterinary Medical Association of New Jersey decided that they would rather meet at Boston with the AVMA than have a meeting of their own in New Jersey. New Jersey was well represented at the AVMA Session.

New York

Mastitis Control Project.—Dr. Harry G. Hodges (CORN '16) writes that he is working with a new mastitis control program being set up in the state. "We plan to start working through four regional laboratories by establishing a fairly large number of so-called demonstration herds. At these, we will make surveys and put into operation certain preventive programs as well as use such treatments for mastitis as may be indicated.

There will be a field veterinarian at each regional laboratory. He will direct the work, which will be done in coöperation with local veterinarians who may be employed by herd owners for other veterinary services. Research work on control and treatment of mastitis will also be done rather extensively."

Schenley Laboratories Staff Enlarged.—Mr. Herbert W. Christoffers has been appointed assistant to Dr. E. C. Williams, vice president in charge of research, Schenley Laboratories, Inc. One of the leading producers of penicillin, Schenley is also active in research and development of other pharmaceuticals.

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Polybrachial Lamb.—Dr. J. R. Wadsworth (UP '44), of Thompson Ridge, submits a picture of a 3-week-old lamb normal in every respect

Dr. J. R. Wadsworth holding lamb and demonstrating presence of a fifth leg attached just behind the left front leg.

except that it has one additional leg just posterior to the left front one. The fifth leg is attached to the lateral surface of the ribs, and there is no interruption in continuity of the skin. The lamb is owned by Mr. Fred Richardson, Searsville, N. Y.

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Dog Research Progress.—The summer issue of this bulletin features an article on "Newer Findings in Dog Nutrition" which was delivered at the meeting of the American Feed Manufacturers Association at French Lick, Ind., on May 22. It is of special interest because Dr. W. A. Krehl is co-author and delivered the paper, and because Dr. Krehl presented a paper on a related subject at the 83rd annual meeting in Boston last month.

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Become Life Members.—Dr. Ray W. Gannett (CORN '05) and Dr. C. G. Rohrer (NY-AMER '08) were presented with life membership certificates by the New York City Veterinary Medical Association at its meeting on June 5, 1946.

s/C. R. SCHROEDER, *Secretary.*

North Carolina

Annual Meeting.—The North Carolina State Veterinary Medical Association held its forty-fourth annual meeting in Asheville on June 28-29, 1946. Dr. R. E. Taylor, Hendersonville, opened the meeting with his presidential address and presided through the remainder of the session.

Dr. A. F. Schalk, The Ohio State University, Columbus, showed his motion picture, "Gastric Fistula and the Interior of the Bovine Stomach"; he also discussed "Practical Procedures Developed *via* Gastric Fistula Technique in Ruminants" and "The Problem of Bloat."

Dr. Ashe Lockhart, Kansas City, Mo., presented a paper on "Shipping Conditions in Horses and Cattle."

Dr. C. E. Bild, Miami, Fla., spoke on problems "From Everyday Practice."

Dr. A. A. Husman, Raleigh, presided as toastmaster at the banquet.

An added feature was a trip to Biltmore Farm where a herd classification demonstration was given in this fine group of 1200 purebred Jerseys.

A new constitution and by-laws were adopted. The committee which revised "North Carolina Veterinary History," as written twelve years ago, reported that the up-to-date material will be published in the fall.

Officers elected for the coming year are: Dr. E. F. Boyette, Smithfield, *president;* Dr. G. C. Monroe, Greensboro, *president-elect;* and Dr. J. H. Brown, Tarboro, *secretary-treasurer.* Executive board members are: Drs. J. C. Bateman, Greenville; N. B. Tyler, Raleigh; and N. G. Baird, Lumberton.

s/J. H. BROWN, *Secretary.*

Ohio

APHA to Meet at Cleveland.—The American Public Health Association which has not held a regular meeting since 1942 will convene at Cleveland for a full session Nov. 11, 1946. This will be the seventy-fourth annual meeting of that society. The attendance ranges around 4,000.

Oklahoma

Semi-Annual Meeting.—The Oklahoma Veterinary Medical Association held an unusually successful meeting at Tulsa on June 9 and 10. The following speakers presented an interesting program on a variety of subjects and evoked lively discussions:

Dr. Ashe Lockhart, Kansas City, Mo.: "Rabies" and "Infectious Granular Vaginitis."

Dr. R. E. Witter, Kansas State College, Manhattan: "Leptospirosis" and "Disease Conditions of the External Ear Canal in the Dog."

Dr. Leo Lowbeer, Head Pathologist, Hillcrest Hospital, Tulsa: "Human Brucellosis."

Dr. Frank Breed, Norden Laboratories, Lincoln, Neb.; "Brucellosis in Animals" and "Crystal-Violet and Tissue Vaccines as Hog Cholera Immunizing Agents."

Dr. E. R. Frank, Kansas State College: "Large Animal Surgery." This was given in two sections and illustrated with motion pictures.

Dr. Breed also conducted a question and answer program and a forum which brought animated discussion from the floor.

The banquet on the evening of June 9 was attended by 132 persons, who saw some excellent entertainment besides enjoying a good meal.

s/C. H. FAUKS, *Secretary.*

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Animal Health and the Prosperous Farm.—"Healthy Animals—Healthy Profits", by Dr. W. E. Irwin, is the leadoff article of a recent issue of *Philfarmer.* Dr. Irwin is a member of the agricultural staff of the Phillips Petroleum Company at Bartlesville. Death and sickness among farm animals as drains on profitable farming are the themes, sound stock, good feeding, and disease control, the remedies. *Philfarmer* is a widely circulated farm paper crammed with useful material by capable authors.—*Ed.*

Pennsylvania

Picnic at Sharon.—Dr. L. P. Graham, of Sharon, acted as host to members of the North Western Pennsylvania Veterinary Club who assembled for a picnic dinner on July 9. The program centered around reports of the State College meeting.

s/P. L. ROUSE, *Secretary.*

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New Medical Supply Division.—J. Bishop & Co. Platinum Works, Malvera, announce the organization of a division to handle sales of hypodermic needles, syringes, and clinical thermometers. One of their specialties is a hypodermic needle of stainless steel with a plastic hub—called the Albalon needle.

Saskatchewan

Outbreak of Food Poisoning.—On Jan. 7, 1946, an outbreak of food poisoning involving 38 patrons of a cafe occurred in Prince Albert. The local and provincial health officers traced the cause to staphylococci contained in a dessert composed of left-over cake, cornstarch, sugar, milk, and pineapple, which had been made the night before and exposed to room temperature for eighteen hours prior to serving. The victims were seized with extreme nausea, violent vomiting, and diarrhea one to four hours after eating. The investigation showed the cafe to be in good sanitary condition. The kitchen staff were Chinese and the waiters Canadian girls, all above reproach for cleanliness. The pudding was incriminated by

the usual process of eliminating the various items of the menu through interviewing the patrons. The laboratory examination (cultural) disclosed large numbers of *Staphylococcus aureus* and *albus* in the pudding but none in separate ingredients from which it was made. The accident was a significant example of poisoning by prepared food allowed to stand that length of time unrefrigerated. — *From Canad. J. Pub. Health, February, 1946.*

Texas

Veterinary Alumni of Texas A. & M.—At the organization meeting of this group, in connection with the annual summer meeting of the State Veterinary Medical Association of Texas, the following officers were elected: Dr. George Burch, Wichita Falls, *president;* Dr. Jack Whitehead, Houston, *vice-president;* Dr. W. C. Banks, Bryan, *secretary-treasurer.*

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Dean R. P. Marstellar to Retire.—Dr. R. P. Marstellar, dean of the School of Veterinary Medicine at A. & M. College, has requested that he be relieved of his administrative duties as soon as is convenient to the college.

Dr. R. P. Marstellar

Dr. Marstellar joined the staff at College Station immediately upon graduation from The Ohio State University in 1905, teaching in the department of veterinary science, under the late Dr. Mark Francis, until the School of Veterinary Medicine was established in 1916. He was elevated to the position of Dean in 1937 and has served with distinction.

No successor has been named, but it is expected that one will be appointed before the opening of the new school year in September, at which time Dr. Marstellar will become Dean Emeritus.

Wisconsin

Meet at West Bend.—Dr. Edward Boesewetter took charge of local arrangements for a meeting of the Southeastern Wisconsin Veterinary Medical Association on August 1. Dr. E. R. Carlson, Waupun, related some of the problems of bovine reproduction, particularly in connection with his work with the Southeastern Wisconsin Breeders' Coöperative.

s/J. O. McCoy, *Secretary.*

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Swine Testing Program.—The University of Wisconsin has developed a program, including a set of equipment for weighing pigs, which they hope will do for the swine industry what cow testing has done for the dairy industry. Pigs will be earmarked and weighed at birth, at weaning time, and at the age of 5 months. The information will tell how many pigs a sow farrowed, how many she weaned, and how well they grew, thus enabling the breeder to retain those sows that raise the most pork per litter.

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Personal.—Dr. C. W. Meeusen (ISC '42) has returned to his home town, Cedar Grove, to open a veterinary hospital and establish a practice. Entering the Veterinary Corps upon graduation, he was first stationed at Omaha, Neb., and then transferred to overseas duty. He spent two years in the China-Burma-India theater, most of the time in direct contact with the 5,000 horses and 120 war dogs attached to his station.

FOREIGN

Argentina

Tubercle Bacilli in Cow's Milk.—Tuberculin tests made on 322 cows in Buenos Aires showed 30.7 per cent reactors. But investigation of 94 samples of milk taken from reactors showing no symptoms of tuberculous mastitis were negative to smears and guinea pig inoculations. As but one inoculation was made from each sample, the investigation was not regarded as complete. Negative results and the absence of tuberculous mastitis appear to run parallel. The danger of so high a percentage of tuberculosis (30.7%) was, however, emphasized. — *Abstracted from Am. Rev. Tuberc., 53, (Jan. 1946): 17.*

Germany

Veterinarians Face Difficult Task.—Under this head, the *British Zone Review* in British-occupied Germany points to the high incidence of animal diseases since the Nazis went down in defeat. Quoting from the *Veterinary Record* (June 15, 1946):

Headed by Dr. Weber, a close friend of Hitler, the German State Veterinary Serv-

ice was one of the most severely nazified branches of public administration in Germany. The task of purging it and forming an organization with similar aims without loss of time was one of the foremost problems confronting the Veterinary and Remounts Section on arrival in Germany.

It was, however, only one of the many tasks with which this branch of Control Commission had to deal. Among others were those of organizing the animals in the zone and the combating of disease: ill-conditioned horses of the Wehrmacht caused an outbreak of mange which, even now, will still take months to eradicate, foot-and-mouth disease and bovine tuberculosis, due largely to a general breakdown of organization in the latter stages of the war, represented also a far reaching problem to be tackled without loss of time.

The article goes on to stress the prominent part the horse has to play in the rehabilitation of the German economic system. The veterinary service is being reinstalled under a zonal veterinary committee composed of Germans.

Russia

Karakul Sheep.—A press report mentioning the movement of 350,000 Karakul sheep from Turkmenia, one of the 16 republics of the USSR, to winter pastures in Kara-Kum gives an insight to the magnitude of the breeding of this famed fur bearing ruminant in the Near East.

Zululand

Nagana Increasing.—An alarming increase in the incidence of the protozoan disease, nagana, or tsetse fly disease, is reported. The infectious agent (*Trypanosoma brucei*) is transmitted by the tsetse fly which has been vigorously fought for many years in many ways, all to no avail. The loss of more than 15,000 cattle and many horses and donkeys, in Zululand alone, during the early summer months is signalized by the veterinary authorities of the South African Department of Agriculture. The idea of shooting off game as a means of checking the breeding of the tsetse fly which was done well during the past ten years did not reduce the number as was anticipated. The fly is more numerous than ever. Some degree of success is now expected from DDT and from a new drug called 1553 which is being used for inoculation purposes. The tsetse fly also transmits trypanomiasis (sleeping sickness) of man.—*London correspondent, J. Am. Med. A., July 25, 1946.*

COMING MEETINGS

Biological Photographic Association. Hotel Bismarck, Chicago, Ill., Sept. 6-8, 1946. Jay Garner, M.D., Winnetka, Ill., convention chairman.

Southern Veterinary Medical Association and Kentucky Veterinary Medical Association. Brown Hotel, Louisville, Ky., Sept. 30, and Oct. 1-2, 1946. F. M. Kearns, 3622 Frankford Ave., Louisville 7, Ky., secretary-treasurer.

Purdue University. Short Course for Veterinarians. Purdue University, Lafayette, Ind., Oct. 2-4, 1946. C. R. Donham, Dept. of Veterinary Science, Purdue University, head.

Pennsylvania State Veterinary Medical Association. Penn Harris Hotel, Harrisburg, Pa., Oct. 9-11, 1946. R. C. Snyder, N. W. Cor. Walnut St. and Copley Rd., Upper Darby, Pa., secretary.

Northern Tier Veterinary Club in conjunction with the Pennsylvania State Veterinary Medical Association. Harrisburg, Pa., Oct. 10, 1946. J. Ross Wiley, Wellsboro, Pa., secretary-treasurer.

University of Illinois. Annual Conference for Veterinarians. Illini Union Bldg., University of Illinois, Urbana, Oct. 10-11, 1946; College of Medicine, University of Illinois, 1853 W. Polk St., Chicago, Oct. 12, 1946. Robert Graham, College of Veterinary Medicine, University of Illinois, Urbana, dean.

Eastern Iowa Veterinary Association, Inc. Hotel Montrose, Cedar Rapids, Iowa, Oct. 15-16, 1946. C. C. Graham, Wellsburg, Iowa, secretary.

North Central Iowa Veterinary Medical Association. Wahkonsa Hotel, Fort Dodge, Iowa, Oct. 24, 1946. B. J. Gray, Box 797, Fort Dodge, Iowa, secretary-treasurer.

Florida State Veterinary Medical Association. Soreno Hotel, Petersburg, Fla., Oct. 28-29, 1946. V. L. Bruns, Box 623, Williston, Fla., secretary.

University of Minnesota. Short Course for Veterinarians. University Farm, St. Paul 8, Minn., Oct. 30-31, 1946. W. L. Boyd, Division of Veterinary Medicine, University Farm, head.

University of Missouri. Short Course for Veterinarians. University of Missouri, Columbia, Nov. 4-6, 1946. A. J. Durant, Dept. of Veterinary Science, University of Missouri, chairman.

Cornell Annual Nutrition Conference. Onondaga Hotel, Syracuse, N. Y., Nov. 7-8, 1946; New York State College of Agriculture, Ithaca, N. Y., Nov. 9, 1946. E. I. Robertson, New York State Agricultural College, Ithaca, general chairman.

American Public Health Association. Cleveland, Ohio, the week of Nov. 11, 1946.

American Society of Animal Production. Hotel Sherman, Chicago, Ill., Nov. 29-30, 1946. W. G. Kammlade, 110 Stock Pavilion, Urbana, Ill., secretary.

United States Live Stock Sanitary Association. Stevens Hotel, Chicago, Ill., Dec. 4-6, 1946. R. A. Hendershott, 33 Oak Lane Ave., Trenton 8, N. J., secretary-treasurer.

Minnesota State Veterinary Medical Society. Jan. 6-8, 1947. H. C. H. Kernkamp, University Farm, St. Paul 8, Minn., secretary-treasurer.

Intermountain Veterinary Medical Association. Jan. 13-15, 1947, Salt Lake City, Utah. M. L. Miner, Dept. of Veterinary Science, Utah State Agricultural College, Logan, secretary-treasurer.

North Carolina State College. Conference for Veterinarians. North Carolina State College, Raleigh, N. Car., Jan. 28-31, 1947. C. D. Grinnells, State College Station, Raleigh, N. Car., program chairman.

Institute of American Poultry Industries. Fact Finding Conference. Municipal Auditorium, Kansas City, Mo., Feb. 2-4, 1947. Cliff D. Carpenter, Institute of American Poultry Industries, 110 N. Franklin St., Chicago 6, Ill., president.

Chicago Veterinary Medical Association. Palmer House, Chicago, Ill., the second Tuesday of each month. Robert C. Glover, 1021 Davis St., Evanston, Ill., secretary.

Massachusetts Veterinary Association. University Club, Boston, Mass., the fourth Wednesday of each month. H. W. Jakeman, 176 Federal St., Boston 10, Mass., secretary-treasurer.

New York City Association. Hotel Pennsylvania, New York, N. Y., the first Wednesday of each month. C. R. Schroeder, Lederle Laboratories, Inc., Pearl River, N. Y., secretary.

Saint Louis District Meetings. Roosevelt Hotel, St. Louis, Mo., the first Friday of each month. C. W. Darby, Dept. of Animal Pathology, Ralston-Purina Co., St. Louis 2, Mo., secretary.

Houston Veterinary Medical Association. Houston, Texas, the first Thursday of each month. Edward Lepon, Houston, Texas, secretary-treasurer.

DEATHS

W. H. Empey (KCVC '16), 54, Battle Creek, Iowa, died June 1, 1946. Dr. Empey had practiced in Battle Creek since 1916, was a former mayor of the town, and had also been president of the school board.

★A. R. Glaisyer (ISC '00), 66, Kalaheo, Kauai, Hawaii, died March 20, 1946. He had been with the United States BAI for six years before accepting a U. S. Army commission and assignment to the Philippines. In 1909, he was appointed deputy territorial veterinarian in Hawaii, and he held that post until his death.

★E. B. Hollecker (KCVC '11), 59, Kansas City, Kan., died June 18, 1946. He was born Nov. 21, 1886, at Kansas City. With the late Dr. G. I. Blanchard, he founded the Missouri Valley Serum Co., in 1912. Dr. Hollecker was president of the company at the time of his death. He was admitted to the AVMA in 1917.

J. A. McMaster (WEST '05) 71, Ravenswood, W. Va., died Feb. 1, 1946. He had practiced in Ravenswood for many years.

★W. T. Miller (KSC '24), 49, Indianapolis, Ind., died July 1, 1946. He was born in Pittsburgh, Pa., Oct. 26, 1896. He received his D.V.M. degree from Kansas State College in 1924, his M.S. and PhD. degrees from Cornell University, in 1929 and 1930. Until 1943, he was with the U. S. BAI in bovine mastitis and other animal disease research work. For the past two years, he had been in charge of the Pitman-Moore anaërobic bacterin and toxin departments. Dr. Miller was admitted to the AVMA in 1929.

★G. F. Motteler (WASH '36), 37, Colville, Wash., died June 19, 1946, at Yakima, Wash. He was born at Wenatchee, Wash., Oct. 11, 1908, and married Miriam Fordham in 1937. Dr. Motteler was admitted to the AVMA in 1936.

W. Ritchie (USCVS '21) 68, Covington, Ky., died Feb. 26, 1946. He had practiced in Covington for twenty-one years, devoting his time almost entirely to small animals.

H. Stewart (CVC '94), 78, Chariton, Iowa, died of a cerebral hemorrhage June 1, 1946. He had practiced in Lucas County, Lacona, and Chariton. An example of his keen interest in the profession was his attendance record at 52 consecutive annual meetings of the Iowa Veterinary Medical Association, in which he served one term as president. He served twelve years as a member of the city council of Chariton.

★Indicates member of the AVMA.

THE VETERINARY PROFESSION AND THE WAR

Veterinarians for Korea

The Chief, Civil Affairs Division, War Department General Staff, has requested assistance in obtaining two (2) qualified veterinarians one for the position of "Assistant Chief, Bureau of Veterinary Affairs—Korea," and the other for the position of "Director, Institute of Veterinary Research—Korea."

The rating, salary, and job specification for each position is as follows:

ASSISTANT CHIEF, BUREAU OF VETERINARY AFFAIRS—KOREA

Rating—P-5.

Salary.—$5,905.20 plus 25 per cent, total of $7,381.50.

Job specification.—To assist in the following: Supervise the organization, hiring, firing, promotion of Korean and U. S. veterinary personnel; consolidate and approve requisitions, secure and supervise distribution and proper use of supplies; supervise the verification of suspected communicable diseases, institution of necessary control measures, and preventive and diagnostic injection programs; supervise the inspection of slaughter houses, dairies, and all meat and dairy products processing plants; supervise preparation and printing of forms, receive, consolidate, and evaluate all reports from the field; review and revise laws and ordinances relating to veterinary affairs; review and budget accounts for national bureau and lower echelons; secure grants for schools, advise all veterinary schools; prepare radio and news releases; conduct short courses; coördinate with other bureaus for efficient operation of veterinary services.

Qualifications.—Male, licensed veterinarian, with two or three years' experience in the Bureau of Animal Industry, U.S.D.A., or State Veterinarian, or equivalent. Should have experience with field work in communicable disease control and in veterinary sanitary inspection. Should have administrative ability and be able to demonstrate approved methods.

DIRECTOR, INSTITUTE OF VETERINARY RESEARCH—KOREA

Rating.—P-4.

Salary.—$4,902.00 plus 25 per cent, total of $6,127.50.

Job specification.—Administration of laboratories located at Pusan and Taegu Kitasato Institute producing biological products for Korea. Supervise technical processes in laboratory work on veterinary products. Research on technical production of vaccine.

Applicants for either position should address correspondence to:

Chief, Veterinary Division
Office of The Surgeon General
War Department
Washington 25, D. C.

When so doing, the applicant should give his academic training, qualifications, and experience.

Awards and Citations

Major Cesar Clavell, V.C., has been awarded the Army Commendation Ribbon by Brigadier General Wm. W. Bessell at the direction of the Secretary of War, with a citation which reads, in part, as follows: "Major Clavell displayed outstanding efficiency and devotion to duty. During the crucial period of the war when enemy submarine warfare seriously threatened the food supply of this area, his expert advice in conserving and storing of foods in a tropical climate contributed to the assurance of an adequate food supply for this department. He devised a system of supervision, rotation, and inspection of foods that resulted in great savings to the government. His tact and forceful approach were instrumental in inducing the local sources of food supply to conform to the high sanitary standards required by the Army. On occasion, he acted as Department Veterinarian and frequently was called upon to advise the Naval Forces in Puerto Rico on matters pertaining to perishable foods. His consistently outstanding performance of duty reflects great credit upon him and upon the military service."

• • •

Colonel Elmer W. Young, V.C., was awarded the Legion of Merit for exceptionally meritorious conduct in the performance of outstanding service by command of Lt. General Gillem. The period of action covered by the award was May 6, 1945, to April 30, 1946, in the China Theater. The presentation was made at Shanghai, China.

Veterinary Officers Separated from Military Service

Alabama

Dorrough, Bill

Arkansas

Eagle, Thomas M.

California

Cooper, Emanuel S.
Crundwell, J. B.
Groves, Newell P.
Handel, Robert T.
Hylton, Jack W.
Lunt, Donald W.
Milbradt, Duane L.
Romo, Ralph R.
Talcott, Robert V.
Tietze, A. L. Jr.

Colorado

Morris, James V.
Short, George E.
Snodderly, Wm. J.
Watts, Raymond E.

Connecticut

Burr, Orville L.
Gorman, Richard J.

Delaware

Nusser, William A.

District of Columbia

Keeler, John R.

Florida

Wassenaar, P. W.

Idaho

Hoon, Henry Ross
Weil, Frederick

Illinois

Bark, Hurdman W.
Faulkner, Harold W.

Indiana

Blume, Ervin V.
Fireoved, DeLoss W.
Oldham, William R.
Stout, Robert W.

Iowa

Brager, Richard C.
Eittreim, Silas C.
Fistler, Raymond P.
Karbert, Melvin W.
McIntire, John C.
Stephan, Carl F.
Venzke, Carl E.
Wolfe, James W.

Kansas

Atkinson, George W.
Beckenhauer, N. D.
Hentzler, Robert W.
Ogilvie, Fred B.
Stoddard, Edward D.
Upham, Roy Walter
Wilson, Mark F.

Maryland

Armstrong, H. L.
Dibbell, Charles B.
Hickman, G. R. Jr.
Willis, Thomas E.

Massachusetts

Blake, John E.
Gates, Silas B.
Wilcox, William A.

Michigan

Mercer, Robert L.
Moore, Donald Lee

Minnesota

Meyers, Howard
West, Ralph Leland

Mississippi

Bradshaw, N. D.

Missouri

Anderes, Robert L.
Barnhart, Walter G.
Mash, Noah
Mowder, Wilber H.
Renfrow, Charles D.

Nebraska

Hubbard, Henry E.
McGill, Dana T.
Reppert, Roy E.

New Hampshire

Swail, C. E. Jr.

New Jersey

Greene, James G.
Hitchner, S. B.
Stockton, A. E. Jr.

New York

Adolph, W. H. Jr.
Cain, Harold D.
Doig, Robert S.
Droleskey, E. A.
Feldman, Murray
Gilmour, Judd T.
Guthrie, Richard S.
Halpin, George D.
Hantman, Harris W.
Kiesel, George K.
McKown, Donald C.
Majilton, Edward A.
Martin, Kenneth H.
Matuszczak, W. J.
Michaels, Albert M.
Primerano, W. D.
Rosen, Bernard Wm.
Tax, Herman
Thompson, W. B.
Wuori, Leo Adolph
Zimmerman, Theo.

Ohio

Bailey, Robert M.
Bridenstine, W. A.
Gardner, Paul O.
Hawley, Dan W.
Kilburn, Friend L.
Lyday, Charles V.
Mainwaring, G. T.
Meisinger, Fred H.
Mills, John W.
Moats, Arthur E.
Montgomery, C. W.
Rhinebarger, Roy R.
Ripley, Richard A.
Smith, Robert C.
Strong, Warren M.
Vaupel, Carl F.
Weight, Thomas H.

Oklahoma

Bowerman, W. D.
Lee, Robert J.
Stephens, Seidel M.

Oregon

Glaisyer, Roland A.
Rosenwald, A. S.

Pennsylvania

Campbell, Joseph C.
Erickson, John E.
Gorelick, Arthur N.
Knipe, Hesser
Kutsher, Lincoln G.
Mickle, Ross T.
Pease, Clinton L.
Rosenberger, G. G.
Simington, J. O.

South Carolina

Beaty, R. W. Jr.

Tennessee

McGlohon, John M.
Morgan, Harry H.

Texas

Grissam, Garner J.
Grove, Samuel E.
Mostyn, Henry B.
Redmond, Harold E.

Utah

Tugaw, Edward A.

Vermont

Wakefield, W. S.
Wilson, Amos P.

Virginia

Waple, M. J. Jr.

Washington

Anderson, Olin A.
Hales, Marvin R.
Howder, John Wm.
Meyer, Leo Joseph

Wisconsin

Ackerman, Leon F.
Candlin, Paul T.
Downey, Keith W.
Hergren, Douglas R.
Leary, James D.
Nehmer, Eugene O.
Welch, James L.

Wyoming

Redman, Ward D.

Canada

Burley, Douglas R.

Veterinarian in Marine Corps.—Dr. Tom Thaxton (TEX '40), of Menard, Texas, served for twenty-one months as an enlisted man in the Marine Corps. He entered service as a draftee, and was unsuccessful in attempts to transfer to the Veterinary Corps because "there were enough men in the ASTP to fill the requirements of the Veterinary Corps."

Upon completion of boot training, Dr. Thaxton was trained as an amphibian tractor operator and as a gunner on the armored tractors. After reaching Pearl Harbor, he was declared unfit for combat duty and retrained as a "typewriter mechanic," in which capacity he served until discharged.

Regarding the present need for additions to the Veterinary Corps, he offers the following suggestion, "I say, let them use the men who were educated on our money while we served in the ranks."

Check these 5 advantages of CUTTER B-T-V
— the safer hog cholera vaccine

- ✓ B-T-V eliminates live virus — rules out "virus breaks" — keeps premises clean.
- ✓ B-T-V won't cause vaccination stunting. Hogs stay on full feed — reach market faster.
- ✓ B-T-V causes no post-vaccination reactions — no flare-up of other infections.
- ✓ B-T-V is convenient. You can vaccinate *any time* — all or *part* of a herd.
- ✓ B-T-V offers you an opportunity to *wipe out* hog cholera. It is a *safe* and *effective* weapon against this costly disease.

Be sure you have all the facts! See your Cutter representative, or write today to Cutter Laboratories, Berkeley, California; 111 No. Canal St., Chicago; 138 W. 53rd St., New York.

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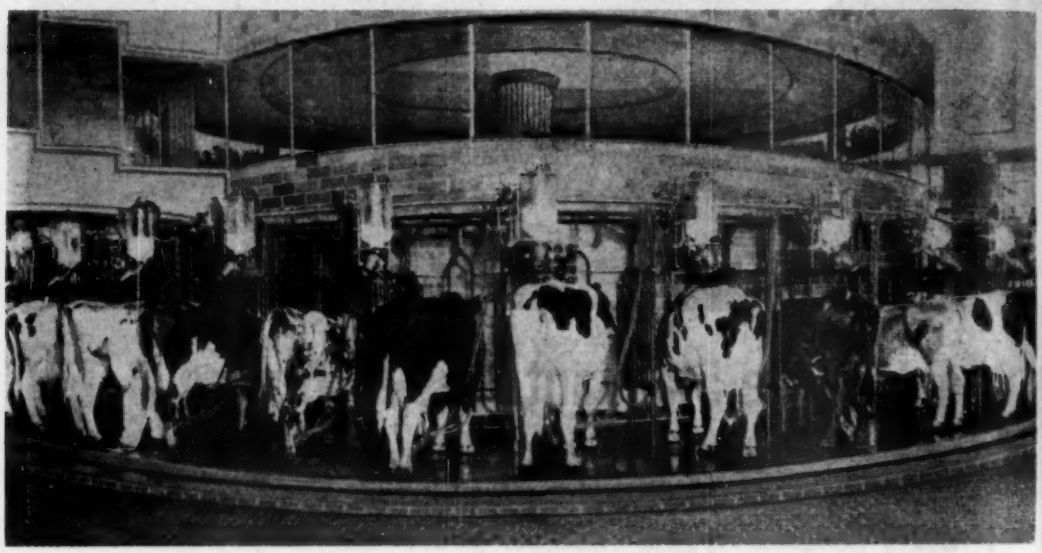
Fine Biologicals and Pharmaceutical Specialties

An' Related Topics

The Rotolactor

Mr. Henry Jeffers, president of the Walker-Gordon Laboratory Co., announces that the rotolactor or "milking merry-go-round" will soon be offered to dairymen of the dairy where it is processed and bottled. The mechanical milker is automatically washed and sterilized after milking each cow. With this equipment, 1,500 cows are



Rotolactor in operation, and glass-enclosed visitors' gallery above.

the world. This machine is a revolving platform, and the size may be adjusted somewhat to the size of the herd. It is efficient in herds of more than 300 cows. The rotolactor in use at Plainsboro, N. J., is a platform 66 feet in diameter, revolving once every thirteen minutes, upon which 50 cows are milked by DeLaval magnetic milkers in a single revolution.

As each cow steps on the platform she is washed, dried, the foremilk is examined, and she is milked. The milk flows automatically to a glass receptacle, is weighed, and then goes through sanitary pipes to milked three times daily at Plainsboro. A smaller unit milks 400 cows three times daily at Charles River, Mass.

Inquiries from many sources were received when the equipment was first completed, but the war halted all progress. It is believed, however, that additional units can be constructed soon. Interest in such units has been expressed in various parts of the United States as well as in Iceland, Africa, France, and South America.

Counting time is not nearly as important as making time count.

PENOVOXIL CAPSULES SQUIBB

For the control of, or as a preventive against, colibacillosis (white scours, infectious diarrhea, calf enteritis). Available in packages of one dozen capsules or bottles of 100.

E. R. SQUIBB & SONS *Veterinary and Animal Feeding Products Div.* **745 FIFTH AVENUE, NEW YORK**

new acid-ester treatment for superficial wounds and abrasions

Promotes Healing—
Also Reduces the Incidence
of Infection

The use of Cerbinol Solution in the treatment of minor wounds and abrasions in both large and small animals is proving highly efficacious. Results have been uniformly good and there have been no contraindications of any kind on any animal.

When treated with Cerbinol Solution, healing of superficial wounds is promoted, and the danger of infection is decreased.

The active ingredients of Cerbinol Solution are malic, salicylic and benzoic acids and their propylene glycol esters in propylene glycol-water medium.

THE TREATMENT: Simply swab the affected areas thoroughly with full strength Cerbinol Solution once or twice daily.

Cerbinol Solution and Cerbinol Ointment are obtainable at all Veterinarian supply houses. They are sold *only* to Graduate Veterinarians.

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PENICILLIN *(Merck)*

Sodium Salt

Refrigeration desirable but not required.

100,000 Oxford Units....per vial $ .60
200,000 Oxford Units....per vial 1.15
(both sizes in serum vials)

Sulfanilamide Powder U.S.P.

1 lb. bottle .....$1.65 per lb.
5 lb. drum ..... 1.60 per lb.
10 lb. drum ..... 1.55 per lb.
25 lb. drum ..... 1.50 per lb.
50 lb. drum ..... 1.40 per lb.
100 lb. drum ..... 1.35 per lb.

Sulfathiazole Powder U.S.P.

1 lb. bottle .....$3.92 per lb.
5 lb. drum ..... 3.85 per lb.
10 lb. drum ..... 3.80 per lb.
25 lb. drum ..... 3.75 per lb.

Sodium Sulfathiazole Powder

1 lb. bottle .....$4.00 per lb.

Sulfapyridine Powder

1 lb. bottle .....$7.50 per lb.

TABLETS

Sulfanilamide 0.5 gram (7.7 grain)

100 Tablets .....$ .65
500 Tablets 1.90
1000 Tablets 3.40
5000 Tablets 16.00

Sulfanilamide 5.0 gram (77 grain)

100 Tablets $3.40

Sulfanilamide 200 grain

Per box of 25 .....$2.15
Per box of 100 ..... 7.80

Sulfathiazole 0.5 gram (7.7 grain)

100 Tablets .....$ .85
500 Tablets 3.50
1000 Tablets 6.00

Sulfathiazole 5.0 gram (77 grain)

100 Tablets $7.00

Terms 1% 10 days, F.O.B. Chicago

AMERICAN CHEMICAL CO.

433 E. Erie, Chicago 11, Illinois

Rats Are Expensive Companions

Each rat is estimated to run up a feed bill of $2.00 a year, not to mention the spoilage and wastage of otherwise valuable food and feed. H. Gunderson says *(Iowa Science Reporter)*: "If you never see rats, but see signs of rats and rat damage, there are from 1 to 100 rats on your farm. If you see rats now and then at night, there are 100 to 500. If you see rats every night, and a few occasionally in the daytime, you are boarding from 500 to 1,000. If you see lots of rats at night and several every day, you probably have from 1,000 to 5,000 rats."

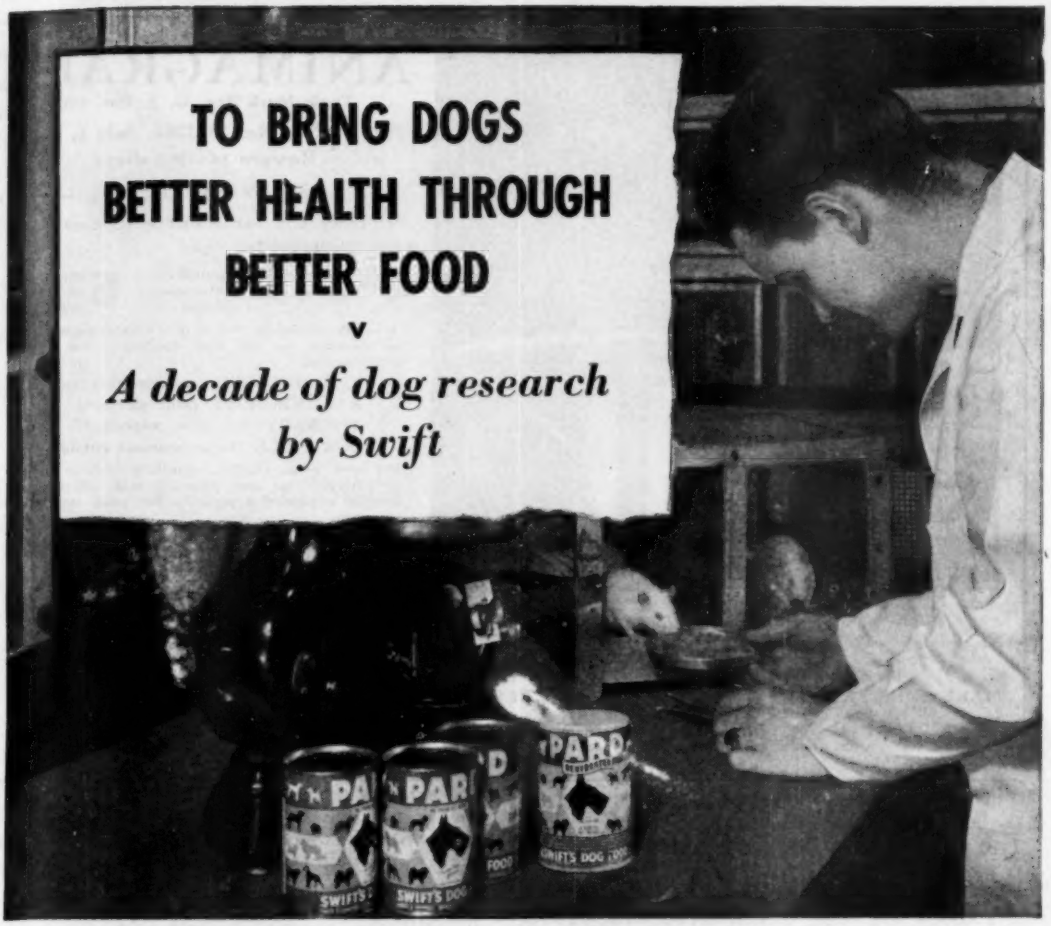
The reason the two great antibiotic agents we now have (penicillin and streptomycin) are destined for the scrap heap of wornout remedies in a few years is that germs are developing resistance to these substances; or, possibly more correctly, because the resistant strains are able to multiply much more rapidly when the non-resistant competing strains are removed from the field. A few years hence it may be necessary to use a thousand times as much of the antibiotic, and give it much faster, in order to get the patient well.—*Science News Letter*, March 23, 1946.

Public health is defined by Dr. C. W. McMillan, in his presidential address to the Canadian Public Health Association at Toronto, May 6, 1946, as "the art and science of preventing disease, prolonging life, and promoting physical and mental health."

Lespedeza was known a century ago as a harmless weed of the South. It was not evaluated as a forage crop until after the first world war.

Veterinarians use a greater dollar value of serums, vaccines, and antitoxins than physicians, and will use about half of the penicillin as soon as there is enough for all.

More people are killed by accidents on the farm each year (43 persons daily) than were killed in World War II.



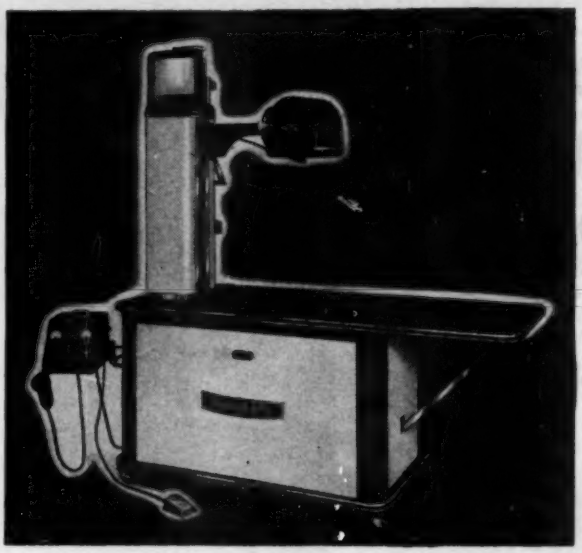
For over a decade now, the Swift Research Laboratories have scientifically probed the feeding habits and nutritional requirements of "man's best friend."

Men of many sciences have participated in this ten year research effort. Swift & Company biologists, zoologists, chemists, veterinarians, and other specialists have experimented and studied unceasingly. They have provided these laboratories with what is probably one of the most authoritative and comprehensive records anywhere on the nutrition and feeding of dogs.

Pard is formulated to the exacting specifications of the Swift Research Laboratories. Thus Pard can be fed with the greatest confidence. A laboratory with fine traditions, scientists in nearly every field related to the nutrition and health of the dog, and a vast collection of authoritative data on dog feeding—all these factors combine to insure the excellence of Pard.

Swift & Company, Chicago

THE PARD FORMULA *is rich and appetizing and includes wholesome foods dogs need . . . a well-balanced formula, rigidly adhered to and nutritionally excellent. Pard contains every essential for good nutritional health.*



THE ANIMAGRAPH

Illustrating radiographic position. Tube lowers straight down under table for fluoroscopy. Units removable as portable. Less than 30 seconds for any change.

MAKE SURE THE X-RAY MACHINE YOU BUY REFLECTS SOME THOUGHT OF THE VETERINARIAN IN ITS DESIGN. Don't make the mistake of purchasing a medical outfit designed for use on the human body.

ANIMAGRAPH

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Beware of Imitations

—NEW MODEL—

Basically the same but with new modern refinements.

4 Outfits in **1** Exclusive Veterinary Design **S**hock-proof afe ure

The only complete x-ray machine designed from the ground up for the exclusive use of the veterinarian.

FLUOROSCOPY (motion pictures)
RADIOGRAPHY (still pictures)
THERAPY (for skin treatment)
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You owe your clients complete service including x-ray. You owe yourself safe, efficient apparatus designed especially for your use.

Write for Prices. Use This Coupon.

CAMPBELL X-RAY CORP.
110 Cummington St., Boston 15, Mass.

Kindly send me descriptive information, including prices and terms, on the Campbell X-Ray Animagraph.

Dr. .....
(Please Print)

Address .....

.....
(City and State)

The Seven Wonders of the World—Revised List

Phooey on the Seven Wonders of the World made up by the globe trotter of Sidon (What's his name?) some 2,000 years ago: the Colossus of Rhodes, the Pyramids and the Sphinx, the Leaning Tower of Pisa, the Great Wall of China, the Hanging Gardens of Babylon, and the two lesser sights you've forgotten. Here are some better jobs:

Empire State Building
Golden Gate Bridge
The Atomic Bomb
Aerial Transports
Hollywood
The Bronx Zoo
The Steel Mills of Gary

Were works of Nature included, what's the matter with the Grand Canyon of the Colorado, Old Faithful, the harbor of Rio de Janeiro, Mt. Hood, Mt. Wilson, Niagara Falls, etc., *ad infinitum* if you'd just trot around the New World only. In 1946 A.D., the old Seven Wonders of the World wouldn't make the 10-cent sideshow in this neck of the woods. Another wonder of this hour are the fine medical centers and veterinary colleges dedicated to human happiness.

A prize-winning Dalmatian (onetime Coach Dog) has to be low enough at the shoulders to trot under the axle of a buggy, but the catch is no one has a buggy.

The story's going around to let Supply and Demand set the price of meat in the hope that S. will knock D. in the noggin for a knockout.

A friend of mine wants to know how to diagnose an occult lameness in a fine saddle horse, a little chore in horse practice I've found about as easy as picking the males out of a can of sardines.

American railroads transported, without a single fatality, over 90 billion pounds of explosives during the war.

PURGATIVE FOR ALL DOMESTIC ANIMALS

dependable . non-griping

*U*niform chemical compound, ISTIZIN is recommended because it is—

Effective
Stable
Non-griping
Well tolerated
Odorless
Tasteless
Economical
Easy to administer

Supplied in bottles of 1 pound and five pounds of powder and in 2½ grain tablets, tubes of 30.

LITERATURE SUPPLIED ON REQUEST

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PHARMACEUTICALS OF MERIT FOR THE VETERINARIAN

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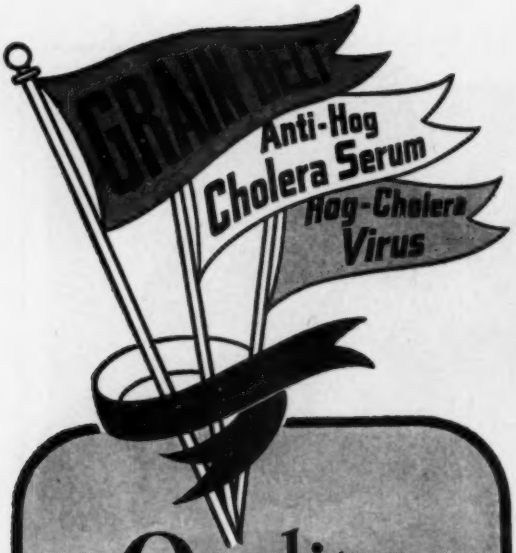

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Licensed Graduate Veterinarian

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Grain Belt Supply COMPANY

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Member
Associated Serum Producers, Inc.

Aliquid Veri

In 1853, Dr. George H. Dadd, veterinarian of Boston, wrote: "We generally use a mixture of chloroform and chloric ether in our operations and consider it preferable to pure chloroform.—*The Modern Horse Doctor, page 252.*

Ninety years later, folk who had never anesthetized an animal called that pioneer a quack. In 1853, inhalation anesthesia was just being introduced in human surgery, yet here is described the ***modus operandi*** for horses in detail. *The Modern Horse Doctor* is the first scientific veterinary book by an American author.

After losing 40 lambs to preying eagles, a Montana sheepman took after the birds with an airplane and shotgun; brought down eight in a jiffy; easy as shooting hens in the barnyard. Eagles are slow compared with an airplane; flew right alongside and got 'em at close range, is the way it's briefed in the *Western Livestock Journal.*

The old sheep shears are on the way out. A motor truck parks in the corral and the traveling shearers take off the wool with power clippers and move on to the next ranch—that's the way it's told in Times Square.

From the steam engine to the atomic bomb—which has made so questionable that superiority our resources used to afford—almost everything that has happened has contributed to an accelerated disintegration of the means of self-protection for individuals, governments, nations, and the whole civilization.—*From Harper's Magazine.*

"Long last" is going strong, "by and large" is slipping, and "must needs" has hit the long trail. Styles *do* change.

Out our way we're either shoveling dust out of the house or looking down the chimney to see if it's ours.—***Drought and Deluge.***

Now comes the discovery that the white man taught the Indians how to scalp, and "I believe it," said the little woman as she handed over 89 cents for a slab of tough cattle meat.

Not so long ago, this bristling boxer wasn't at all sure what the future held in store for him. A fractured leg while executing a difficult maneuver and it looked as though finish had been written to a promising career.

Good thing his long time friend, the veterinarian, wasn't discouraged. He diagnosed the situation, selected the Stader External Reduction and Fixation Splint as the method of management.

Stader Splints are practical and efficient instruments for attaining accurate reduction and uninterrupted fixation of fractured extremities in small animals. Accurate reduction is possible because of the skeletal traction and universal manipulation of both fragments of the fracture and because positive skeletal contact is established with both the upper and lower fragments. Then too, circulatory normalcy is assured, and atrophy of disuse is minimized through the elimination of circular bandaging and plaster casts.

Stader Splints provide the logical method for attaining desirable end results in the management of fractures of the extremities. For complete information and interesting case histories, write today to General Electric X-Ray Corporation, 175 West Jackson Boulevard, Chicago 4, Illinois. Dept. 2563.

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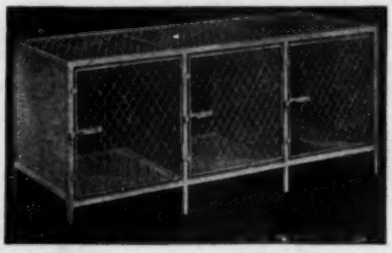
CAGES NOW AVAILABLE

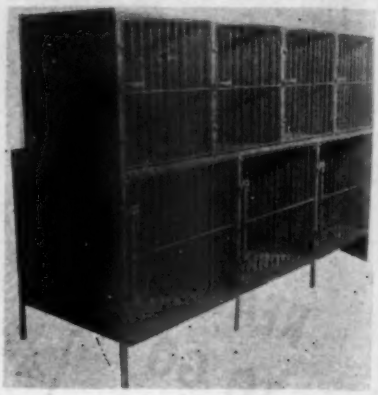
PLACE YOUR ORDER NOW
For Simons Superior Dog Kennels

These all-steel kennels are of welded steel frames and 18-gauge sheet metal backs, floors and partitions, with ⅛" thick wire mesh doors and tops. Easy to clean, no place for bugs. Made in UNITS as shown or custom-built individual cages of any size. Choice of light gray enamel or aluminum paint.



Set-back at rear gives ventilation to lower cages.

3 Cage Units
24x24x24
$90.00
30x30x30
$120.00



Popular 7 Cage Unit
$230.00
Lower Cages 30 x 27 x 28.
Upper Cages 24 x 24 x 22.
Economical in Space and Price.
Bar type doors shown on kennel above, $10 extra. Standard doors are wire mesh.

Baltimore Wire & Iron Works
505 West Franklin Street, Baltimore, Maryland
All Prices F.O.B. Baltimore

Army Efficiency

General Eisenhower has remarked that since V-J day the public and the press have stressed the faults of the Army rather than its achievements, and have shown a notable tendency to over-cure all faults at the expense of service virtues. This has occurred in spite of the fact that the American Army has done better than most in the bad business of war.

He points out that radical changes may go far toward destroying an efficiency that, if far from perfect, has been at a level sufficient to play a major part in the winning of two global wars.

Life is like that; vice has interest while virtue goes unnoticed. Else, why are the books of history full of kings' mistresses while practically ignoring their wives?

It is not true, as often said, that cereal grain found in Egyptian tombs two or more thousand years old will sometimes sprout. Such grain is carbonized beyond sprouting. —*Science News Letter.*

Immunization and Inspection of G. I. Pets

Additional safeguards against importation of foreign diseases into the United States are being employed at overseas debarkation points, as soldiers must have their acquired pets examined and vaccinated by a Veterinary Corps officer. Monkeys, dogs, cats, and any other animal a G. I. might plan to bring home will be inoculated with a Habel mouse-tested rabies vaccine. This must be done "not more than one hundred and eighty days nor less than thirty days" before entry into the United States.—*Journal of the American Medical Association.*

The most successful business man is he who holds onto the old just so long as it is good and grabs the new just as soon as it is better.

In picking up a puppy, put the full length of one hand under its belly to form a support and use the other hand to grasp and steady it from above.—*The Dog News.*

Every order designed for

Speed

Accuracy

Reliability

SERVICE - PROTECTION

For better Anti Hog Cholera Serum-Virus biologicals and pharmaceuticals produced by and sold to Veterinarians only, try CORN BELT service.

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Ingredients for BACTERIOLOGICAL CULTURE MEDIA

Each of these products is standardized to meet the highest requirements of suitability for the purpose for which it is to be employed.

Bacto-Agar
Bacto-Beef Extract
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Bacto-Tryptose
Bacto-Tryptone
Protease-Peptone
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Specify "DIFCO"

THE TRADE NAME OF THE PIONEERS
In the Research and Development of Bacto-Peptone and Dehydrated Culture Media

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INCORPORATED
DETROIT 1, MICHIGAN

New Award in Dogdom

Winners of awards as "Dogdom's Man and Woman of 1945" are Mr. Laurence A. Horswell, Elmhurst, N. Y., and Mrs. Milton Erlanger, Elberon, N. J. As tokens of this recognition, each will be awarded a "Fido," and it is hoped that in years to come these

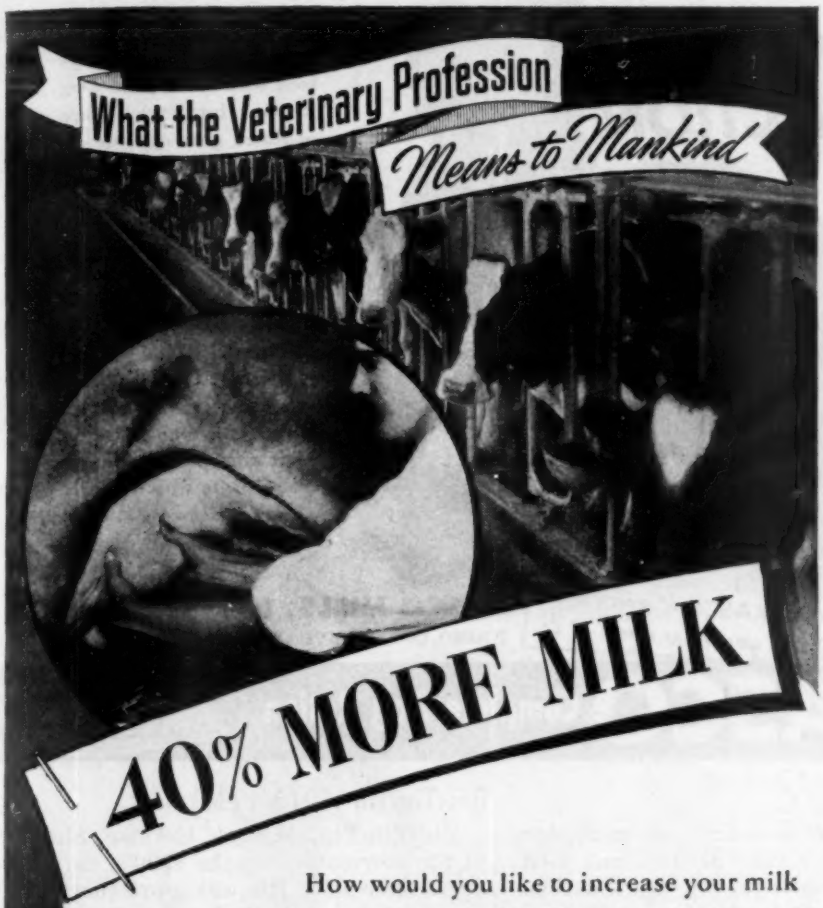
"Fido" award

will take on a significance comparable to the "Oscar" awards by the motion picture industry.

Mr. Horswell, secretary of the Dachshund Club of America, was selected because of his extraordinary contribution in establishing and maintaining the popularity of the Dachshund in recent years. Mrs. Erlanger, consultant to the Army's Quartermaster Corps, was picked because of her work with the nation's war dogs during World War II. The award is sponsored by Gaines Dog Research Center, New York, and the trophy was executed by Mr. Arthur J. Ritchette, New Haven, Conn.

W. H. Wright, D.V.M., U. S. Public Health Service, describes the ridding of a house of bedbugs by heating. Using the central heating plant in summer, rooms heated to 120 to 125 F. for several hours gave complete control of bedbugs at all stages. Most of the fumigants which give satisfactory results are dangerous to use, the author warns.—*Abstr. Rev. Applied Entomol. November, 1945.*

Among the ten points in a longtime program adopted by the American Medical Association is "research for the advancement of medical science; the inclusion of medical research in a National Science Foundation such as is proposed in pending federal legislation."



How would you like to increase your milk production an average of 40% per cow? A recent 10-year study reveals that 10,500 herds made this surprising increase—by instituting ANNUAL PHYSICAL EXAMINATIONS for all cows, plus approved management practices. Back of such results were the science, skill and specialized training of the modern veterinarian. He is to animal health what the doctor is to human health. Through regular examinations, he can head off countless livestock troubles BEFORE they gain a foothold—advise on measures to help keep animals in top condition, so they will return top profits. Constructive preventive medicine is the veterinarian's greatest value.

AMERICAN FOUNDATION FOR ANIMAL HEALTH

THIS MESSAGE

is appearing in 24 leading farm magazines this month, sponsored by

ASSOCIATED SERUM PRODUCERS

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FOR DOGS OF
DISTINCTION
OWNERS who feed for the fine points in dogs feed Kasco Complete Dog Ration. Into every ounce of Kasco goes appetite appeal as a basic "must" — a meaty treat, nutritionally complete.
Kasco's combination of 18 well-rounded food elements, meat meal being the basic ingredient, builds the qualities that you want in your dog. Smooth coat, strong, straight bones, well-proportioned body, bright, alert eyes—are a few of the fine points which characterize Kasco-fed dogs.
Just try KASCO... your dogs will tell you how good it is.
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KASCO
DOG RATION
KASCO Complete Dog Ration

Freibank

Freibank, as connoisseurs of meat hygiene well know, is a meat product long used in Germany to salvage, by sterilization, meat otherwise unfit for the human dietary and, in general, rejected in other countries. *Freibank*, says the *Veterinary Record*, furnishes an interesting sidelight of German food economy and, in the present food shortage, provides a valuable contribution to the limited supply.

The reduction of the animals of a nation in the face of increasing human population is the highway to *Freibank*. "It can't happen here" may not be true.

Many a dairy farm has failed because the boss spent the milk money before he bought more feed.

The use of pasture is the best and practically the only way to overcome temporary grain shortages in swine feeding.—*W. N. McMillen, MSC.*

There is no substitute for a careful diagnosis.

Rin-Tin-Tin (1918-1932)

Rin-Tin-Tin, famous German Shepherd of the movies during the 1920's, earned his owner $330,000. Rin was a prisoner of war, captured in puphood by the First Army, A.E.F., at the Battle of St. Mihiel, Sept. 12, 1918, along with his litter mates. He did not sire any famous actors, but Rin-Tin-Tin III is reported to have done special service for the Army during World War II.

There are 6,011,000 farms in the United States totaling 1,143,000,000 acres, an increase of 82,000,000 acres over 1940 but a decrease of 86,000 in the number of farms, due to an increase in the average size of farms from 174 acres in 1940 to 190 acres in 1945.—*From Agricultural Situation, USDA, May 1946.*

Success lies, not in achieving what you aim at, but in aiming at what you ought to achieve and then pressing forward.—*R. F. Horton.*

Recognition of Nature's ability to heal is good practice.

We're Sending 37,282 Dog-Breeders to You

Died—because he couldn't talk
Major did pretty near everything but talk. If he had known how to do that he'd be alive today.
One day Major was playing with an old rubber ball in the street. Suddenly, he swallowed a stone which had stuck to the ball.
When he came home, he vomited. His master thought he had indigestion. That was his diagnosis for death.
A veterinarian could have saved Major by detecting the stone in his stomach with an x-ray.
Remember: You are responsible for your dog's life and health. If you suspect trouble, don't risk diagnosing him yourself. Respiratory disease, indigestion, persistent itching fits, constipation—are often symptoms of serious disorders. Incorrect diagnosis neglects the real cause of the ailment and can prove fatal.
Ask your veterinarian: "Can treating a foreign object in the stomach for indigestion have serious or fatal results?"
GOSHEN LABORATORIES, INC.
GOSHEN, NEW YORK
"THE PRACTITIONER'S HOUSE"
THE VETERINARIAN . . .
your dog's best friend

This is a reduced reproduction from Dog World

THIS is the first advertisement of our campaign for veterinarians in Dog World. Its theme is "*Diagnosis for Death.*"

Each advertisement dramatizes a common instance where amateur diagnosis and treatment result in death for the dog. We then ask the dog-breeder to discuss the case cited with you.

Our purpose is to help educate the public on the wisdom of professional diagnosis and advice *before* treatment.

The picture captioned "The Veterinarian —Your Dog's Best Friend" appears in all advertisements.

Goshen Laboratories sells to veterinarians *only* for we feel that over-the-counter sales encourage amateur diagnosis and treatment. Look for the startling "Diagnosis for Death" ads in Dog World each month. We will appreciate your comments and those of your clients.

GOSHEN LABORATORIES, INC., GOSHEN, NEW YORK

"THE PRACTITIONER'S HOUSE"

Good Veterinary Surgery demands the best in Sutures and Ligatures

Specify Armour

Armour Surgical Gut embodies these important performance qualities:

1. *sterility*
2. *true uniformity*
3. *knot strength*
4. *pliability*
5. *tieability*
6. *surgically desirable finish*
7. *controlled absorption*

SOLD TO VETERINARIANS ONLY

Armour and Company

VETERINARY DIVISION • KAW STATION • KANSAS CITY 10, KANSAS

Healthy Animals Equal Healthy Profits

Dr. W. E. Irwin (ISC '39) makes this statement (*PhilFarmer*, 2nd quarter, 1946) and lists five health rules as minimum practical principles of disease prevention that are basic to the profitable production of farm animals: sound stock, good feeding, control of transmissible diseases, suitable housing and surroundings, and veterinary assistance. As a member of the agricultural staff of Phillips Petroleum Co., Bartlesville, Okla., Dr. Irwin offers the following advice to livestock owners:

> Call your veterinarian when disease occurs or, better yet, when it threatens. He can save you a lot of grief such as post-vaccination "breaks." His skill in diagnosis may help you to avoid trouble before it occurs. We all accept the wisdom of visiting our dentist "twice a year" rather than waiting for a swollen jaw and throbbing molar. The same preventive care is necessary for animal well-being. With livesock prices such as exist today, it is good business sense to use the veterinarian's trained, scientific services when animal health is endangered. Good stock deserves and needs skilled veterinary attention.

Since congressmen are seriously concerned with basic and applied research, the cue is for scientists to concern themselves with congressmen.—*From A.A.A.S. Bulletin (in effect).*

The evil schemes of men are as fragile as the minds that make them.—*F.B.I.*

Coronary disease accounts for one out of five deaths among physicians, or twice as many as cancer.—*J. Am. Med. A.*

If all the nits of mites and lice hatched out and found a host, this *would* be a lousy world.

If we understand the OPA officials correctly, the little pig that stayed home was in conspiracy against price control.—*Cleveland Plain Dealer.*

YES! It's harder *Now* than ever to get

KEN-L-BISKIT

Here are the facts why you can't get this famous food every time you ask!

● We're sorry if you can't get Ken-L-Biskit. But today, as never before in the past, we are experiencing an extremely acute shortage of essential food materials. We simply can't get enough of the vital supplies used in manufacturing Ken-L-Biskit. During the war, material was limited. Now the situation is more difficult than ever. And, of course, this favorite food has always sold out fast. So again we say: If you can't get Ken-L-Biskit, we're sorry; keep trying. We're making all we possibly can. And we hope it won't be long till Ken-L-Biskit will be easy to buy again.

KEN-L-BISKIT

The Dog Food of Champions

THE QUAKER OATS COMPANY • KEN-L-PRODUCTS DIVISION • CHICAGO, ILLINOIS

VET-AIDE
BACTERICIDE-FUNGICIDE

2% aqueous solution of di-isobutyl phenoxy ethoxy ethyl di-methyl benzyl ammonium chlorides.

A new chemical approach to antisepsis and bacterial control. Extremely effective at high dilutions. Odorless, non-toxic, neutral. A surface active agent that penetrates dry scabs.

Use Vet-Aide for disinfection of cuts, lacerations, superficial wounds, fungus skin infections, mucous membrane, widely denuded areas, irrigations, wet dressings for chronic ulcers and bacterial skin infections. Operating room equipment.

Address professional inquiries to

CATIONIC PRODUCTS INC.
Taunton, Mass.

GUARANTEED TO GIVE SATISFACTION

M·A·C

ACCEPTED AND USED BY THE PROFESSION SINCE 1900

IN THE TREATMENT OF

Splints, Spavins, Curbs, Side Bones, Inflamed Tendons, Bursal Lameness, Etc.

Single Bottle	$ 2.00
1-4 Dozen and One FREE . . .	5.00
1-2 Dozen and Two FREE . . .	8.00
1 Dozen and Four FREE . .	15.00
2 Dozen and Eight FREE . .	25.00

AGENTS

Wingate Chemical Co. MONTREAL — Kentucky Serum Co. LOUISVILLE, KY.

CARTER-LUFF CHEMICAL CO.
The Originators of Packaged Medicines for Veterinarians
HUDSON, N. Y.

Everybody Works but Mother

The *Cedar Rapids* (Iowa) *Gazette*, columnist VKM speaking, tells the farmers of that segment of the Cornbelt how *he* handles the swine-disease situation, *nostra ipsorum opera*, as follows:

Tuesday.—Immunized pigs against cholera. The boys caught the pigs, the daughter used the syringe, and I gave the virus.

To which might have been added: "Never mind the scientific technique governing the practice of veterinary medicine."

He who cannot remember history is compelled to repeat it.

Size and weight considered, the feather of a bird is said to be the strongest structure in nature.

Observations made by the medical service of the British Army showed that DDT-treated shirts did not prevent scabies among soldiers.

This worthy dog cause needs your helping hand!

You can return in some measure the love, devotion, usefulness and service dogs have given you by supporting the work of

NATIONAL DOG WEEK

Increasingly National Dog Week, Inc., is being recognized as the spokesman and champion of the dog. For 19 consecutive years it has not only sponsored National Dog Week observances (dates this year: Sept. 22-28) in communities all over the country, but has also maintained a year-round office of service to dog owners everywhere.

Our work is supported entirely by voluntary contributions, publicly acknowledged and economically spent. *Your help is needed now.* If you'll send $5.00 or more we'll acknowledge your gift by entering your name on the membership roll of "Man's Best Friend" Club and forwarding a copy of Helene ("Dear Dog Lady") Arlington's new 500-page book of true dog stories, "Dogs in the News". The book sells for $3.75; you'll have something you should have anyhow and support the work of NDW at the same time. And if you send less than $5.00 we'll forward along with your membership card a gorgeous, ready-to-frame copy of G. W. Barrette's prize-winning "A Dog's Eye View" editorial, beautifully designed in four colors by George W. Brettell, dog lover and master craftsman in illuminated and engrossed manuscripts. Your contribution is deductible in computing income tax.

FILL IN AND MAIL TODAY.

NATIONAL DOG WEEK, 424 Madison Ave., New York 17, N. Y.

Enclosed is $ ..... as my contribution to National Dog Week. Please rush my "Man's Best Friend" Club membership card and the special work mentioned above to which I am entitled.

NAME.....

STREET AND NO.....

CITY AND STATE.....

Benlo provides dual action. 1. Treats sarcoptic and demodectic mange, non-parasitic mange, mites and other skin irritations caused by parasites. 2. Relieves itching . . . prevents excessive scratching. Benlo contains chlorine-free benzyl benzoate and benzyl alcohol emulsified in a neutral aqueous base. Spreads freely. Reaches deep rooted infections. Safe to use. Available in 6-ounce, pint and gallon containers. Write for folder B-2.

R. J. STRASENBURGH Co.
PHARMACEUTICAL CHEMISTS SINCE 1886
ROCHESTER 4, NEW YORK

Dependable Detoxicants

Nitro-Hyposol

Solution and Tablets

Cyanosis

Intravenous Injection of Nitro-Hyposol Solution is specific

Toxemia

Oral doses of tablets neutralize toxins of alimentary origin

CURTS-FOLSE LABORATORIES

73 Central Avenue **Kansas City, Kansas**

Controlling Sex

I bred 5 cows when the sign was in Scorpio (loins). I got 5 heifer calves. I bred 3 cows in the sign of Libra (balance). I got 3 bull calves, believe it or not. I don't say that the signs have anything to do with this, but would like to hear from other breeders on this subject. So writes B. P. in *Hoard's Dairyman* for July 10, 1946.

[Some addict of the horoscope could quickly collect a great deal of information on this subject by checking the service dates with the sex of calves in the records of any purebred registry association. Maybe it works for horses, hogs, and sheep, also.—Ed.]

Good will, like a good name, is got by many actions, and lost by one.—*Lord Jeffrey.*

Among the many whims of food consumers which lower nutritive values is the blanching of celery.

The Chinchilla Racket

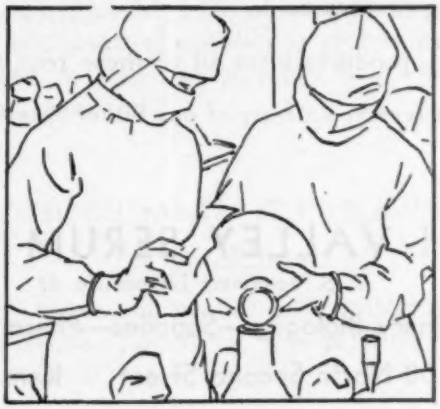
Speaking in strong terms in the interest of the legitimate fur farmers, *American Fur Breeder* allows: "Hoarded cash and lack of consumer goods has resulted in the greatest crop of suckers this country has ever seen." Fur farming has outlived the speculative stage except for the chinchilla promoters who are playing the same old game, the editor points out. Instead of selling for $35,000 to $80,000 as the newspapers say, chinchilla coats are a drug on the market, the skins are thin and delicate, the fur rubs off, and the garments will barely last out the second season. So, take the hunch of one who knows and dodge the chinchilla racket.

A paint of the whitewash type containing DDT will solve the dairyman's insect problem, reports declare.

Intelligent nursing may be more important than proper medication.

PENICILLIN SCHENLEY CONTROL

here . . .



. . . *insures your confidence*

here

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Producers of Penicillin Schenley
Executive Offices:
350 Fifth Avenue, New York City

At the Schenley Laboratories, a system of control of vast proportions insures maximum purity, potency, and pyrogen-freedom for the end product which bears the label Penicillin Schenley.

Since its production is safeguarded with such skill and precision at every step, Penicillin Schenley may be used with fullest confidence at all times.

PROTECTION

The Veterinarian occupies a position of great responsibility, for it is his duty to protect the livestock industry against disease. In order to successfully accomplish these results, it is necessary to use the best Drugs and Biologics obtainable.

Missouri Valley products meet all of these requirements.

If you have not received a copy of our Silver Anniversary Catalogue—send for one.

MISSOURI VALLEY SERUM COMPANY

U. S. Veterinary License No. 23

Veterinary Biologics—Supplies—Pharmaceutics

Kaw Station 50 North Second Street Kansas City 18, Kansas

SOLD TO VETERINARIANS ONLY

Member Associated Serum Producers

Moon Blindness

"It is gratifying," says an old timer, "that the nutritional-ecological theory of periodic ophthalmia has been confirmed by General Kelser's workers at Front Royal." In June, 1944, the General reported that since the addition of riboflavin to the ration of every horse on the station "not a single case of moon blindness has been discovered." (*Western Livestock Journal*, January, 1946.)

"Do you know," the o.t. goes on to say, "since 'way back at the turn of the century, through lots of observation and experience, we refuted the infectious theory. It was as plain as the nasal hypophysis on your facial facade that microbe hunting was a wild goose chase and we said so loud and often. The urge to hunt germs was too strong to get an attentive ear, so every chase followed the same old anise bag and of course never caught the culprit." Yes, medical research has made a sharp turn. It is looking for some of the real causes of disease and not without astonishing results.

Cater to the Weak?

Dr. George S. Benson, president of Harding College, Searcy, Ark., is credited with the following statement (*National Livestock Producer*, June, 1946):

> When a philosophy appeals to human weakness it is plainly earmarked as destructive. Central planning, for example, charms nobody but people who believe in super-men and recognize themselves as weaklings. The offer of freedom from fear is a vulgar appeal to cowardice. Freedom from want was never more than a bait to catch lazy people. Collectivism philosophy offers these, which mean mediocrity for everybody.
>
> Individualism offers opportunity, a challenge; not soft stuff like security. Its rewards are for the energetic, not the lazy. Individualism offers personal liberty and individual freedom—freedom in expression, freedom in business, and freedom in worship. These appeal to man's noble traits. Individualism offers these, with the highest standards of living for everybody the world has yet known.

CONTROLLING "SHIPPING FEVER" LOSSES

Field results, as well as extensive experimental work, show that the most efficient and practical method for preventing losses from infections incident to shipment of cattle is the administration of relatively small dosage of

ANTI-HEMORRHAGIC SEPTICEMIA SERUM
(Lockhart)

1. Immediately before shipment of cattle, inject Anti-Hemorrhagic Septicemia Serum (Lockhart). Dosage: 8 to 10 cc per hundred pounds of weight.

2. When it is not possible to make injections before shipment of cattle, the administration of 12 to 15 cc of serum per hundred pounds weight, during or immediately after shipment, produces equally as good results as the above.

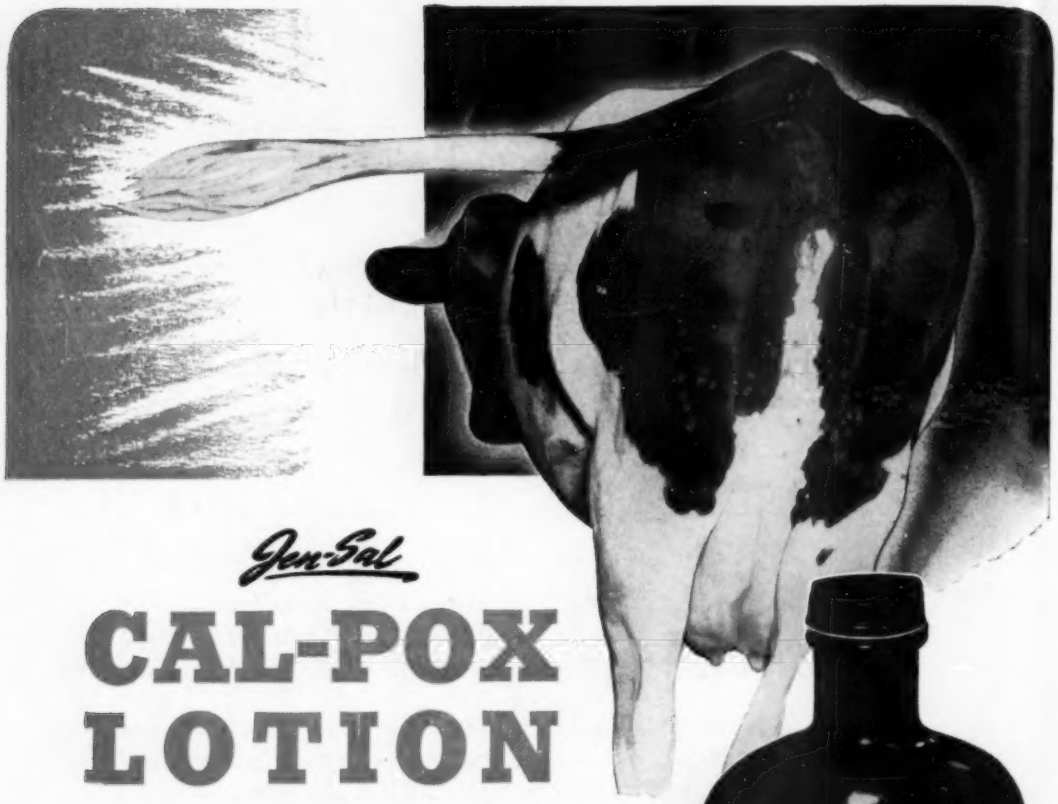
It is generally recognized that the hemorrhagic septicemia organism plays an important part in the losses incident to shipment of cattle, but many veterinary pathologists believe that a filterable virus is often the primary inciting cause of so-called "shipping fever". Because of this possibility, Lockhart Anti-Hemorrhagic Septicemia Serum is produced from mature bovines known to be immune to the various "shipping fevers". In our opinion, this "Plus Value" accounts for the superiority of the results obtained from its use.

ASHE LOCKHART, INC.

"Producers of Better Biologicals for Graduate Veterinarians"

800 Woodswether Road **Kansas City 6, Missouri**

IN CANADA — CANADA REPRESENTATIVES, Ltd.
193-195 Spadina Avenue, Toronto, Ontario



Jen-Sal

CAL-POX LOTION

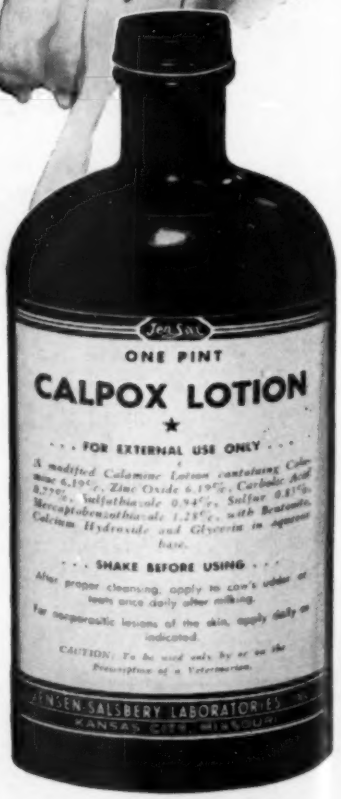
Whether true cowpox, false cowpox or any of the non-parasitic dermatoses, Jen-Sal Cal-Pox Lotion assures an easily applied, quick-drying, bacteriostatic and fungistatic astringent dressing that stimulates rapid resolution of lesions.

The rational formula of Cal-Pox—based on a widespread practitioner opinion survey — incorporates Modified Calamine Lotion with Zinc Oxide, Phenol, Sulfathiazole, Sulfur and fungicidal Mercapto-Benzo-Thiazole (1.28%) in a glycerinated-aqueous base.

Supplied from all Jen-Sal Depots in

Pint Bottles **$0.60**
Gallon Bottle **4.20**

(Less Usual Discounts)



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